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### EXTRACT

*From an Act prescribing Rules for the Government of the State Library,  
passed March 8th, 1861.*

Section 11. The Librarian shall cause to be kept a register of all books issued and returned; and all books taken by the members of the Legislature, or its officers, shall be returned at the close of the session. If any person injure or fail to return any book taken from the Library, he shall forfeit and pay to the Librarian, for the benefit of the Library, three times the value thereof: and before the Controller shall issue his warrant in favor of any member or officer of the Legislature, or of this State, for his per diem, allowance, or salary, he shall be satisfied that such member or officer has returned all books taken out of the Library by him, and has settled all accounts for injuring such books or otherwise.

Sec. 15. Books may be taken from the Library by the members of the Legislature and its officers during the session of the same, and at any time by the Governor and the officers of the Executive Department of this State who are required to keep their offices at the seat of government, the Justices of the Supreme Court, the Attorney-General, and the Trustees of the Library.

O. M. CLAYES, STATE PRINTER.



התאחדות חסידים



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# Engineering and Scientific Press.

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## A WORD TO READERS IN THE ATLANTIC STATES.

Much complaint has reached us, through various sources, at the general lack of knowledge at the East, with regard to mining and other operations on this coast, and the frequent impositions practiced upon the public there, in consequence, by irresponsible persons passing off upon unsuspecting victims worthless mining stock, or persuading them, by false representations, to organize companies and advance moneys upon worthless ground, or ground which oftentimes has neither value or locality. If our friends at the East, who are still anxious to engage in the laudable venture of mining enterprise, would do so intelligently, let them subscribe for and carefully consult the only journal on the Pacific coast where every mining enterprise that is worth naming is, from time to time, noticed, as its merits may warrant. A mining enterprise on the Pacific coast, which is not referred to in this journal, in some way or other, as often as once in three or four months, is certainly one which people in the Atlantic States should beware of. Our advice to people at the East is never to venture small amounts in mining. If you must start small, let a number of such club together, so as to make the aggregate amount to be invested, such as may be worth your while to inquire into.

**THE MARIPOSA COMPANY** has obtained a temporary injunction against the further control of the property of the company by Dodge Bros., of this city. The company complain that the said firm have not kept good faith with them, inasmuch as the assignment was made with the understanding that the debts of the company were to be paid out of the proceeds of the working of the mines on the estate; whereas the firm has been buying up the debts at a discount, and now demand that the company should pay gold in full. The damages claimed are from \$200,000 to \$300,000. A receiver has been appointed.

**THE PIONEERS.**—We have received a copy of the constitution and by-laws of the Society of California Pioneers, as revised and adopted in October, 1866. The publication also contains the lists of officers annually elected since the organization of the society in 1850, together with a full list of members from that date.

## GASTON'S NEW GRINDER AND AMALGAMATOR.

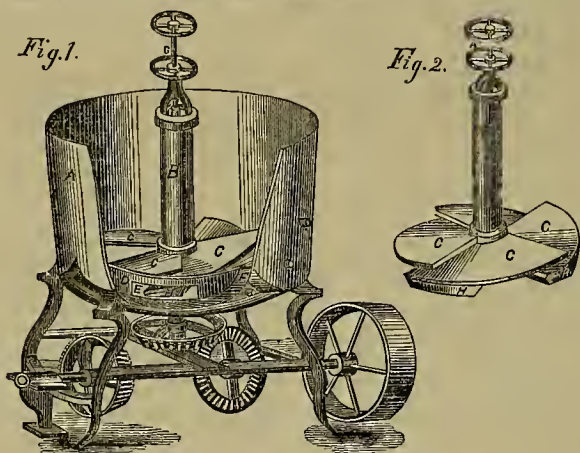
Improvements never cease; and we hail with pleasure any real improvement in machinery for extracting the precious metals from their ores, because every improvement in that direction adds directly and materially to the wealth and prosperity of the whole Pacific coast.

Persons interested in quartz and cement mills, would do well to examine the principles of Mr. H. A. Gaston's Screw Grinder and Amalgamator, an illustration of which is given herewith, before concluding their purchases of amalgamating machinery for their mills.

The working of this pan differs, in manner, from any other in use. The mullers C, C, consist of a screw with broad flanges or threads (similar to a propeller screw),

and forms a layer or strata of quicksilver upon the bottom of the pan. The revolution of the screw produces a strong downward and under current of the pulp, drawing it down between the threads in four broad sheets, when the shoes effectually rub it into the quicksilver; after which it passes out of the cylinder through the spaces in its base, and is forced up between the outside of the cylinder and the inside of the pan and over the top of the cylinder, when it is again drawn down by the screw and rubbed into the quicksilver, and so on indefinitely.

In this manner a constant circulation of all the pulp in the pan is kept up, and alternately brought in contact with and rubbed into the quicksilver, and then forced from it, to be again returned with that precision attendant upon perfect machinery.



"THE SCREW GRINDER AND AMALGAMATOR."

which flanges overlap each other a short distance, to permit and compel a free passage of the pulp between them. The screw is about three feet in diameter, and revolves horizontally within a low, vertical cylinder, and the shoes for grinding, H, are attached to the base of the flanges or threads. Through the base of the cylinder are oblong holes or spaces, E, corresponding in size and number to the spaces between the threads of the screw. These permit the pulp to pass out from or into the cylinder. The revolution of the screw in either direction, causes the pulp to flow to the center of the pan and forces it between the shoes and the dies, thus adding the immense force of the screw to that of gravity, when rotated in one direction, and forcing to its aid a powerful atmospheric pressure when revolving in the opposite direction. In the ordinary pans gravity alone causes the pulp to pass beneath the mullers, while it is drawn to the center by guide blades intercepting the current of the pulp, caused by the revolution of the muller.

We are informed by the inventor that he does not grind quicksilver in his pan, but after the pulp has been ground to a proper fineness, the screw muller is raised a sixteenth, an eighth or a fourth of an inch, (the height being different with silver or gold ores,) and the quicksilver is poured in

The screw muller is the heart; the spaces in the cylinder are the arteries; the spaces between the cylinder and the sides of the pan are the veins of the system, while the pulp answers for the blood, and the circulation of this appears to be as perfect and as regular as in the human system.

With the screw amalgamator, it is calculated that settlers are not required; for the under current spoken of, draws the quicksilver and amalgam down beneath the screw and holds it there as closely and quietly as if in a tank.

The above includes the inventor's description and claims for this new pan, which we have thus fully given, because we consider it likely to prove a valuable improvement; and, for the further reason, that we take pleasure in contributing our meed of praise to the exertions and success of men of enterprise and genius.

One of these pans is now daily put in motion at the "Pacific Iron works," in this city, where the inventor, Mr. Gaston, will take pleasure in illustrating its movements to those interested in quartz and cement milling operations.

We understand that arrangements will soon be made for the manufacture of these pans at any of the foundries in this city, and we are informed, in the meantime, that persons desirous of negotiating for them

can do so by addressing the inventor, at the Cosmopolitan Hotel in this city, or R. L. Thomas, Esq., at Virginia City, Nevada.

**THE CHINA MAIL BANQUET.**—The first mail steamer of the new line to China and Japan, sailed as announced on New Year's Day. The occasion was duly celebrated by a grand banquet on the evening previous at the Occidental Hotel. Many of the San Francisco notables were present, representing in a highly creditable degree, the wealth and the intelligence of the city. The banquet hall was magnificently and tastefully arrayed, and was appropriately ornamented with the mingled devices characteristic of the two countries thus for the first time to be brought into intimate acquaintance with each other. Governor Low presided and Bishop Kip acted as chaplain. After the dinner—which was of course unexceptionable—had been duly discussed, when men were in the comfortable coffee and cigar state, which is said to usually succeed such a performance, came "the feast of reason and the flow of soul." In answer to toasts drank, speeches were made by General McDowell, Captain Eldridge, of the P. M. S. Company, Hall M'Allister, Ex-Governor Stanford, R. B. Swain, Rev. Dr. Stone, Rev. Horatio Stebbins, A. A. Low, Ex-President of the New York Chamber of Commerce; R. G. Sneath, President San Francisco Chamber of Commerce; Samuel L. Wilson, Fung Tang, one of our noted San Francisco Chinese merchants; W. H. L. Barnes, Samuel Williams, of the Bulletin; E. A. Rockwell, of the Call; Asher B. Bates, F. M. Pixley, and Governor McCormick, of Arizona. A congratulatory dispatch from the Mayor and Council of Placerville was read.

At three and a half o'clock the meeting was declared dissolved, and the guests separated, all on good terms with each other, with "the occasion," and with everybody else.

**SALT FOR THE PARIS EXHIBITION.**—Messrs. Winegar & Shaw, 308 and 310 Front street, have shown us four samples of salt which they have prepared to go forward by our Commissioner to Paris. No. 1 is a very fine specimen of Arizona rock salt, as clear as crystal, and some five inches in length. No. 2, "California Solar Evaporated Salt." No. 3, California salt ground in water after a peculiar method, by Messrs. W. & S.; and No. 4, Fine salt for table and dairy use. For the last article, Messrs. W. & S. have taken premiums for the last six years.

**ART AND NATURE.**—The Pacific Art Gallery, No. 28 Third street, in addition to some fine paintings, contains a small but select assortment of stuffed birds and animals worth seeing. Among the latter our attention was, perhaps, more particularly attracted to a large wild goat from Montana, a spotted deer of beauty, and rather a curious animal of the carnivorous order, known as the carcajon; possessed of an unusual degree of sagacity, it is seldom entrapped. Hence its rarity.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the facts and theories they advance.

[Written for the Mining and Scientific Press.]

## Progress of Metallurgy and Saving of Fuel.

MESSEURS. EDITORS.—It seems strange that with the abundance of ore we have in our mines, and the quantity of fuel at our command, we are still obliged to send ores abroad for reduction, and afterward buy the metals at such prices as the smelters may choose to place upon them. It must seem to outside observers that we neither possess the ores or fuel, so often mentioned in your valuable paper, or that we lack the knowledge of extracting the metals from the ores. Yet the fact is, we have both ores and talent in abundance; and having in our favor the expensive transport of ore to Europe and the metal back again, we surely ought to compete successfully with the foreign manufacturers, not only in gold, silver and copper ores, but in iron as well. If metallurgy had made no progress, and we had to resort to old modes of smelting, we still could retain the field; but if we take into consideration the improvements made in the saving of fuel by various inventions, foremost among which stands C. W. Siemens's, we shall find that we possess all we need in our midst if we only take advantage thereof.

Various experiments have been made in the way of smelting works in California, and as far as gold and silver ore is concerned, I believe I was the owner of the only successful works ever erected in this State. For copper ores various experiments have been made with very poor success. The parties engaged in those experiments here had some theoretical, but not the practical knowledge necessary to make the proper calculation for desired results; for if it had been otherwise, and they had formed a full knowledge of the fuel and ore which they expected to manipulate, they would not have spent their friends' money in vain, and destroyed all confidence in further enterprise.

The impression has gone out that, as the Antioch smelting works were a failure, Mount Diablo coal is not fit for smelting ores. To this I respectfully dissent by saying it makes but little difference with regard to the character of the coal, whether it be anthracite, bituminous, lignite, or even wood, peat or sawdust; any material containing hydro-carbon may be employed to raise as high a degree of heat as is necessary to smelt any metal or ore. All that is necessary is the proper knowledge of the fuel and its application; with that we need never fail to produce the degree of heat requisite to effect the reduction of the ores of metals. Few of our mineralogists have given this subject the proper attention it deserves; but men of the greatest ability, like Professor Faraday, have greatly ventilated the subject. I will give you a short abstract of what he has said on the subject of fuel, in connection with gas regenerating furnaces:

"Gaseous fuel is obtained by the mutual action of coal, air and water, at a moderate red heat. A brick chamber, perhaps six feet by twelve, and about ten feet high, is constructed with one of its end walls converted into a fire grate, *i. e.*, about half way down it is a solid plate, and for the rest of the distance consists of strong horizontal plate bars, where air enters, the whole being at an inclination, such as that which the side of a heap of coals would naturally take. Coals are poured through openings above, upon this combination wall and grate, and being fired at the under surface, they burn at the place where the air enters; but as the layer of coal is from two to three feet thick, various operations go on in those parts of the fuel which cannot burn, for want of air.

"Thus the upper and cooler part of the coal produces a large body of hydro-carbons; the cinders or coke which are not volatilized, approach, in descending, towards the grate; that part which is nearest the grate burns, with the entering air, into carbonic acid, and the heat evolved ignites the mass above it. The carbonic acid passes slowly through the ignited carbon, becomes converted into carbonic oxyd, and mingles in the upper part of

the chamber (or gas producer) with the former hydro-carbons. The water, which is purposely introduced at the bottom of the arrangement, is first vaporized by the heat and then decomposed by the ignited fuel, and re-arranged as hydrogen and carbonic oxyd; and only the ashes of the coal are removed, as solid matter from the chamber at the bottom of the fire bars.

"These mixed gases form the gaseous fuel. The nitrogen which enters with the air at the grate, is mingled with them, constituting about one-third of the whole volume. The gas rises up a large vertical tube, from twelve to fifteen feet, after which it proceeds horizontally for any required distance, and then descends to the heat regenerator, through which it passes before it enters the furnaces.

"A regenerator is a chamber packed with fire bricks, separated so as to allow of the free passage of air or gas between them. There are generally four of them placed under a furnace. The gas ascends through one of these chambers while air ascends through the neighboring chamber, and both are conducted through one end of the furnace where, mingled, they burn, producing the heat due to their chemical action. Passing onward to the other end of the furnace, they (the combined gases) find precisely similar outlets down which they pass; and traversing the two remaining regenerators from above downwards, heat them intensely, especially the upper part; and so travel on in their cooled state to the chimney.

"Now the passages between the four regenerators and the gas and air are supplied with valves and deflecting plates, which are like four way cocks in their action; so that by the use of a lever these regulators admit air or gas to the furnace.

"It is to be observed that the intensity of the heated flame, which leaves the furnace for the stack, always proceeds downwards through the regenerators; so that the upper part thereof is most intensely ignited, keeping back, as it does, the intense heat. So effectually is this accomplished, that the gases which enter the stack to be cast into the air, are not heated above three hundred degrees of Fahrenheit.

"It is considered that when the furnace is in full order, the heat carried forward to be evolved by the chemical action of combustion is about four thousand degrees, whilst that carried back by the regenerator is about three thousand degrees; making an intensity of power which, unless moderated, would fuse furnace and all else exposed to its action.

"Thus the regenerators are alternately heated and cooled by the outgoing and entering gases and air.

"Great facility is afforded in the management of a gas furnace. Not merely can the supply of gas and air to the furnace be governed by valves in the passages, but the very manufacture of the gas fuel itself can be diminished, or even stopped, by cutting off the supply of air to the grate of the gas producer; and this is important, inasmuch as there is no gasometer required.

"The economy in fuel is estimated practically as one-half, even when the cheapest kind of fuel is used. Carbon, when burnt perfectly into carbonic acid, in a gas producer, evolves about four thousand degrees of heat; but if burnt into carbonic oxyd, it only evolves twelve hundred degrees. The carbonic oxyd, in its fuel form, carries on with it the twenty-eight hundred degrees in chemical force which it evolves when burning in the real furnace, with a sufficient supply of air.

"The remaining twelve hundred degrees are employed in the gas producer, in distilling hydro-carbons, decomposing water, etc. The whole mixed gaseous fuel can evolve about four thousand degrees in the furnace, to which the regenerator can return about three thousand more."

In addition to the above, I can produce other statements, from more than fifty establishments where gas furnaces are used, and where a saving of more than 50 per cent. of fuel is effected. I have not only seen, but built and worked such furnaces; and if our people would adopt them for metallurgical operations, we should not be obliged to send any more ore to a foreign country for reduction.

In my next I will give you a description of the application of petroleum and coal tar for heating boilers, smelting and glass furnaces.

J. MOSHEIMER.

AN AVALANCHE.—A gang of Chiuamen at work on the Central Pacific Railroad, were buried by a snow-slide on the 22d December. Some four or five were dead when exhumed. The snow is from ten to fifteen feet deep on the Summit.

[Written for the Mining and Scientific Press.]

## PROCESS OF ROASTING ORES, ETC.

Translated from the German of F. Plattner, for the Mining and Gas-Light Journal, New York.

BY J. H. TIEMANN, M. E.

## NUMBER FIVE.

3. *Matt*.—This mill product consists chiefly of  $\text{Fe}_2\text{S}_3$ ,  $\text{Fe}_2\text{S}$  in different proportions, so that either the  $\text{Fe}_2\text{S}_3$  is in larger proportions than the  $\text{Fe}_2\text{S}$ , or—which less frequently occurs—that the  $\text{Fe}_2\text{S}$  is in larger proportions than the  $\text{Fe}_2\text{S}_3$ . In the former case we may suppose the matt composed of  $x(\text{Fe}_2\text{S}_3, \text{Fe}_2\text{S}) + m(\text{Fe}_2\text{S}_3, \text{Fe}_2\text{S})$  and in the latter case as  $x(\text{Fe}_2\text{S}_3, \text{Fe}_2\text{S}) + (\text{Fe}_2\text{S}, n\text{Fe}_2\text{S}_3)$ , in which case, however, a small part of the protosulphide and subsulphide is sometimes replaced by other metals, as subsulphide of copper, sulphides of lead, zinc, manganese and silver; the matt also often contains slag mechanically combined, which, in a furnace matt containing sulphide of zinc, and consequently difficultly fusible, may often amount to twenty per cent. When ores consisting chiefly of pyrites, partly in a natural and partly in a roasted state, are smelted to a matt in a furnace, under a covering of slag, the sesquioxys of iron in the roasted part is reduced, at the expense of the sulphur of the raw part which escapes as a vapor to a protoxyd, and combines as such with the earthy materials forming a slag, which afterwards combines with the slag used as a covering.\* When the slaging (fluxing) is imperfect, which occurs when there is a lack of earthy material, particularly quartz, a part of the protoxyd of iron may be taken up by the matt, an oxy-sulphuret may be formed ( $n\text{Fe}_2\text{S}_2 + \text{Fe}_2\text{O}$ ) and a matt may be formed having the formula,  $m\text{Fe}_2\text{S}_2 + n\text{Fe}_2\text{O}$  ( $\text{S}_2, \text{O}$ ). If the ore was not free from other metals, which are likewise inclined to separate as sulphurets, they will be included in the compound.

Pulverized matt, when roasted, acts similar to magnetic pyrites. If it be roasted at a low temperature and with proper precautions at first, besides free sesquioxys of iron, considerable quantities of protosulphate is formed, which, afterwards, at an increased temperature, as in the case of that formed from magnetic pyrites, is changed to persulphate under evolution of sulphurous acid; the amount formed is about twenty-one per cent., having seven per cent. of sulphuric acid.

4. *Kupferkies* (copper pyrites)  $\text{Cu}_2\text{S}$ ,  $\text{Fe}_2\text{S}_3$  when roasted, acts similar to magnetic pyrites, except that besides a small quantity of persulphate of iron, a sulphate and free oxyd of copper is formed. If coarsely pulverized, copper pyrites be roasted at a dark-red heat and constantly stirred, and atmospheric air admitted until the smell of sulphurous acid disappears, it changes to a spongy powder, which, when cooling, changes to a dark red color. This powder consists chiefly of sesquioxys of iron, a suboxyd and protoxyd of copper, and contains protosulphate and persulphate of iron, and sulphate of copper—the latter in considerable quantities. If this product be now submitted to a bright red heat, and air admitted, the protosulphate of iron (as in the case of pyrites and magnetic pyrites) changes to persulphate; and there remains, besides the sesquioxys of iron and the protoxyd of copper, only sulphate of copper and a little persulphate of iron with twenty per cent. of sulphuric acid. If the temperature be still increased, these sulphates are decomposed, leaving the free oxyds of iron and copper, the sulphuric acid escaping partly as such, and partly as sulphurous acid and oxygen.

5. *Kupferstein* (copper matt). This mill product, when containing a high percentage of copper, consists principally of  $m\text{Cu}_2\text{S}$ ,  $\text{Fe}_2\text{S}_3$ ; when containing a medium percentage of copper  $\text{Cu}_2\text{S}$ ,  $\text{Fe}_2\text{S}_3$ ; and when having a low percentage,  $m(\text{Cu}_2\text{S}, \text{Fe}_2\text{S}_3) + \text{Fe}_2\text{S}$ , or in the latter case is a mixture of copper matt  $m\text{Cu}_2\text{S}$ ,  $\text{Fe}_2\text{S}_3$  with iron matt  $\text{Fe}_2\text{S}_2$ ,  $\text{Fe}_2\text{S}$ , in variable proportions, so that a copper matt, with a very low percentage of copper, may have the composition  $(\text{Cu}_2\text{S}, \text{Fe}_2\text{S}_3) + \text{Fe}_2\text{S}$ . The copper matt sometimes contains other sulphur metals, as lead, zinc, manganese and silver, which replace one another; and is not always free from a mixture of sulphide of antimony or arsenic, which unite with the disulphide of copper, and pass into the matt.

When pulverized copper matt is exposed to a dark red heat, and air admitted, it glows readily in consequence of the oxydation of its components; at first it is converted into suboxyd of copper, sesquioxys and protosulphate of iron, sulphurous acid

\*When a part of the sesquioxys has been reduced only to magnetic oxyd (sesquioxys plus protoxyd), and is present in any quantity, it crystallizes in beautiful glistening octahedrons, if the slag, in a large mass, be allowed to cool slowly.

passing off; but after the sulphides, being kept constantly stirred, have been mostly oxydized, and the temperature increased decomposing the protosulphate of iron, it is converted into free oxyd of copper and sesquioxys of iron, with sulphate of copper and persulphate of iron, having about eighteen per cent. of sulphuric acid; by continued roasting and constant stirring, the sulphates of copper and iron—the former only at a bright red heat—are decomposed, leaving free oxyds, while sulphurous acid, oxygen and sulphuric acid pass off—the latter in the form of white vapors.

6. *Bleiglanz* (sulphide of lead)  $\text{Pb}_2\text{S}$ , when pulverized and exposed to a dark red heat, air being admitted, glows of itself in consequence of the oxydation, evolves sulphurous acid, and at a continued dark red heat is converted into sulphate and free oxyd of lead. A higher temperature, not sufficient, however, to cause a sintering or smelting of the free oxyd, produces no further change, for the reason that the sulphate formed during the roasting cannot be decomposed and converted into free oxyd. As the proportion between the sulphate and free oxyd varies in proportion to the amount of other metals present, this portion of our subject will be treated more fully further on, when we come to explain the chemical changes which take place in the roasting of sulphur metals.

7. *Wismuthglanz* (sulphuret of bismuth)  $\text{Bi}_2\text{S}_3$ . In a powder, when heated on a clay saucer in a muffle, just to redness, air being admitted, glows of itself, evolves sulphurous acid, and is very soon converted into a light grey powder without sintering (caking). This powder consists of an oxyd and sulphate of bismuth. If the substance contained copper pyrites, the product when cool has a dark yellowish green color. If this be heated in a glass tube to a bright red, it melts, with the evolution of a little sulphuric acid, to a light brownish grey mass, which on the edges is translucent.

8. *Zinkblend* (sulphuret of zinc), yellow and brown,  $\text{Zn}_2\text{S}$  and Black  $\text{Fe}_2\text{S}_3 + 3\text{ZnS}$ , is, of all sulphur metals which require to be treated by fire, the most difficult to roast. Even when in a fine powder, it requires an uninterrupted red heat and strong draught of air for its complete oxydation, under which circumstances sulphurous acid is evolved, while free oxyd and more or less sulphate of zinc (neutral and basic) is formed. If the blend contains iron sulphuret, either as a component (blackjack) or as an admixture, this is converted into free sesquioxys. If, during the roasting, the temperature be kept pretty high, but a small quantity of neutral sulphate of zinc is formed, and that which has been already formed at a lower temperature, in large quantities, resolves itself into basic sulphate, evolving sulphuric acid, oxygen, and anhydrous sulphuric acid. The basic sulphate is decomposed to a free oxyd, only at a white heat. If the blend contains sulphide of cadmium, this acts in precisely the same manner as the sulphide of zinc.

9. Sulphuret of manganese,  $\text{Mn}_2\text{S}_2$  or  $\text{MnS}$ , found in combination with most of the sulphurets, and mill products from sulphur metals, when heated to a red heat and air admitted, is decomposed to sulphate and red oxyd of manganese; continued roasting at a red heat produces no change; at a higher temperature the sulphate formed is decomposed to sulphurous acid, oxygen, anhydrous sulphuric acid, and red oxyd.

[To be Continued.]

DALL'S MILL.—The loss of this mill by fire on the 21st December, was a serious affair. The Virginia Union says:

The ruin was complete, as not a fraction of machinery was saved. Whatever of amalgam or bullion was in pans, will of course be saved. Several hundred tons of ore were awaiting reduction. There was a large amount of salt in the mill, on storage, valued at \$12,000, which was badly damaged. The insurance on the mill amounted to \$15,000. There was about \$15,000 insurance on the outbuildings, which, however, were saved. The entire value of the mill was probably not less than \$150,000. We learn that Mr. Schamp, the superintendent, has, without any delay, leased the Ophir mill, and will immediately proceed to improve and fix it up after the style of the Dall mill.

AMERICAN CHILLED IRON.—Five American chilled railway wheels have arrived in London. They will be broken experimentally, and further wheels of this kind will be sent over for trial under English rolling stock. We have samples of the iron from which these wheels are cast, and it is of magnificent quality. The fracture is a rich dark gray, medium grained, and shows great toughness, the particles appearing to have been irregularly torn, rather than broken short off. The specific gravity ranges from 7.25 to 7.3185, and the tensile strength from 32,000 to 35,102 lbs., or say 14½ to 16 tons per square inch. The iron is that known as the Salisbury cold-blast charcoal iron, and is worth about £10 per ton in New York.—*Engineering*.



## Mechanical.

## Gas Engines vs. Steam.

The Lenoir gas engine still continues to grow in favor with the Parisians. According to the Gas Company's report for 1865, the total power represented by these engines, at that time in the city of Paris, was equal to 288 horses, consuming 20,342 feet of gas per hour of work, or about seventy-one feet per hour, per horse power. Many improvements have recently been introduced into their construction within the last two years. The convenience, neatness and noiseless operation of the machines is rendering their use quite popular, notwithstanding the cost of running them, over that required by steam.

Pierre Hagan, also of Paris, has recently perfected a very compact gas engine, for which several important advantages are claimed. This machine is protected by twelve patents, dated from 1858, onwards. One of these engines was recently set up in London, with which some careful experiments have been conducted, which are said to have been quite satisfactory. The gas, properly diluted with atmospheric air (about one of gas to nine of air) to produce an explosive mixture, is admitted and exploded, alternately above and below the piston-head, by an ingenious form of slide-valve, carrying suitable gas-burners. The gas is lighted at each half-stroke, by an exterior burner kept continuously burning. The cylinder is kept cool by a water jacket, through which cold water is constantly passing. It is said that careful experiments, with a consumption of 172 feet of gas per hour, show an actual force of two and one third horse power. It is claimed that Mr. Hagan's is the only gas engine that regularly and uninterruptedly works up to its nominal power; and it is maintained that the ignition of the gas by a gas jet, instead of by electricity, as used in the Lenoir Engine, is decidedly advantageous, inasmuch as electricity is a force quite too complicated for ordinary, every day use, and is also more expensive than the gas jet.

Gas engines, at a reasonable tariff for gas, are, perhaps, the best motors extant for obtaining small power—from  $1\frac{1}{2}$  to 3-horse. The dirt, trouble and danger attending steam are thereby obviated, and no expense whatever is incurred while the engine is idle; and the full power is available at a moment's notice, obtained and kept up by simply lighting an ordinary gas jet. The machine is stopped with the same facility. The first cost, we believe, is also less. The introduction of gas engines into all cities and crowded communities, is well worthy of consideration.

**ADVANTAGES OF STEAM POWER.**—Steam has recently been applied to the 60-ton crane, on the Newcastle Quayside, Gateshead, England. The crane is worked by two cylinders, ten inches in diameter, 14-inch stroke, bolted to the side frames. Formerly, when manual labor was employed in moving this ponderous mass with its load, it required about one hour to make a revolution by the aid of sixteen men. By the aid of steam it makes a complete revolution in three minutes, and loads of sixty tons can be run up at the rate of three and a half feet per minute, and swung round with the greatest ease by the attention of one man.

**A TALL CHIMNEY.**—The highest chimney in Cornwall, England, has recently been completed for the Par Metallurgical Works, and reaches an altitude of 237 feet. The stack is erected at a considerable distance from the furnaces, and the long flues are constructed so as to catch the valuable lead fumes that at present go off in smoke. It is calculated that in three years silver and arsenic enough may be collected in this way to reimburse the outlay in building the stack of flues. We believe there is a chimney in Scotland somewhat taller than this, and the tallest, if we mistake not, in the world.

## The Syphon—Suggestions from Prof. Brewer.

Professor W. H. Brewer, of the Sheffield Scientific School, connected with Yale College, furnishes us, in a private letter, the following interesting memoranda with reference to the use of the syphon:

"Since so much has been said upon the subject of the syphon in the Press, let me add a word. A mechanic who had put in a number of syphons at Well's Springs, a farm in New York, told me that the air could always be kept from accumulating at the highest portion of the pipe, if the current was swift enough to carry out the minute air-bubbles that formed by the diminished pressure; that if the current was stopped, or was too slow, the air would be liberated from solution, the same as when spring water is placed under the air-pumps; and that these bubbles would rise and soon cut off the stream of water.

"A patent was taken out some years ago, which claims to clear the pipe of air at the highest point, by another process, acting on the principle of the hydraulic ram. The stream was suddenly stopped and the momentum opened a valve at the top, discharging a little water and any air that might be there. Machines of this kind were advertised in the agricultural papers a few years ago. The advertisers proposed to raise water from wells in this way upon hillside farms. I know nothing of their success."

**CEMENT AND TAR.**—This has been used to a considerable extent, both in this country and Europe, to preserve mortar and brick work, or perhaps, more particularly, to render it impervious against moisture. Some English masons have started the idea that tar, instead of protecting destroys mortar, cement or bad bricks. It is more than probable that the material experimented with in England has been vegetable tar, which is quite a different thing from the mineral tar employed for such purposes in this country. The preservative qualities of the two substances may, very likely, be quite different.

**THE REVOLVING SHIP THEORY** is to be reduced to practice. It will be remembered that the invention consists of a ship so constructed as to roll over the surface of the water instead of being forced through it. A company has been formed in Baltimore to test its feasibility.

**POWER OF SIGHT IN BIRDS.**—The swallow, while flying at the rate of three miles a minute, is yet employed in looking up and down, right and left, for the minute insects on which it feeds, and which it captures and swallows without any diminution of the prodigious speed at which it is traveling.

**THE DENSITY OF THE MOON** is five-ninths less than that of the earth, while the second satellite of Jupiter appears, if we may place sufficient dependence on the determinations of magnitude and of mass, to be even actually denser than the great planet around which it revolves.

**Common phosphorus** bears, for twenty or thirty seconds without ignition, the action of a radiant heat at a focus where, in the fraction of a second, platinized platinum is raised to a white heat.

If the magnesia rock, used in the manufacture of cement, is calcined at too high a temperature, the hydraulicity of the material is destroyed. The product should be finely ground to improve the setting.

It is said that sands which are used as a filter for the purification of water, are effective in proportion as they contain the black oxyd of iron or magnetic carbide.

**A MR. GRAHAM** observes: "It is believed that metallic pores, and, indeed, all fine pores, are more accessible to liquids than to gases.

## Scientific Miscellany.

## The Oldest Land.

It appears that Canada is no longer entitled to be considered as the sole depository of the earliest fossil hitherto discovered, and thereby, in all probability, the first land which appeared above the primeval ocean. Recent laborious researches made by Prof. Hochstetter, of Vienna, have resulted in the discovery, in the calcareous limestone of the Krumman, of undoubted specimens of Eozoon, in all respects similar to those found in Canada. Moreover, the region of table land passing through Central Mexico, and extending northward through the great Utah Basin, is also beginning to attract much attention from geologists, by reason of its late and unexpected fossiliferous developments. It is more than probable that the waters of the Colorado may have drained the land upon whose desolate shores the original ocean first dashed its briny waters.

The study of the rocks, as developed in the fossiliferous remains of early animal and vegetable life, has taught the careful observer that the higher mountains, such as the Sierras, the Rocky Mountains, the Andes, the Alps, the Himalayas, etc., are of much more recent origin than the high table lands, or the lower mountain ranges. Agassiz has suggested the very possible theory that the thicker the crust of the earth where a mountain range has been elevated, the higher has usually been that elevation; hence, as a general rule, the oldest lands are supposed to be of moderate elevation only. This theory seems to be pretty fully substantiated in the cases already alluded to, of the regions bordering upon the St. Lawrence, the Colorado and the Krumman. The highest mountains are, most probably, the result of contractions of the earth's crust, rather than of elevating forces.

After the crust of the earth had become hardened, and the atmospheric temperature such as to allow of a condensation of the aqueous vapors upon the cooled surface, a contraction of the interior soon took place by which the crust became too large. In order to accommodate itself to its fluid interior, this crust became "waved," gradually rising in some portions and settling in others. The elevations formed the nucleus of future continents, while the water flowed naturally into the depressions, which then became the ocean floors. A longitudinal elevation of this kind is probably the origin of the high table lands already spoken of, extending through Mexico and Utah Territory; another probably extended along the eastern portion of the continent, from near the Gulf of Mexico to the mouth of the St. Lawrence, with its axis usually some four or five hundred miles from the present ocean line. Another of these elevations was probably formed through Central Europe and Asia. As a general thing, it was upon these elevations that the carboniferous formations were subsequently imposed.

The crust of the earth, at this time, was comparatively thin, and yielded with a less amount of fracture than at a subsequent period when the higher mountain ranges were formed. As already intimated, it is more than probable that the loftiest mountains have been the result of contraction rather than upheaval; that they have assumed their elevation at a comparatively recent period, and that such elevation is due quite as much, if not more, to the subsidence of valleys than the upheaval of the ridges. Along the lines of these fissures volcanic forces have found vent, which have ejected immense masses of lava, that have piled up the volcanic peaks which form the most striking features of all high mountain ridges.

Indeed, it is difficult to conceive of the possible generation of any force at all adequate to the upheaval of such mountain

masses, especially where there has been fifty or sixty miles or more of solid earth crust to break through; while upon the other theory the action of gravitation furnishes an ample solution of the problem. Under this theory, we should naturally look for the oldest lands at points of minor elevation, such as the Colorado Basin, etc., just where the fossiliferous records, as they are being gradually developed, are placing them.

**MERIDIONAL DIFFERENCE IN TIME.**—It is somewhat singular that the electric telegraph has not been employed to a greater extent than has been the case, in determining the difference of time between different meridional points. According to the New York Journal of Commerce, the difference of time between London and New York, as to-day established, was ascertained a number of years ago, by three chronometric voyages between London and Cambridge, Mass., and that between Cambridge and New York by telegraph. The accuracy of this determination, says the Journal, is about to be tested through the Atlantic Cable. If the difference between New York and San Francisco was ascertained by telegraph, it is not within our present recollection. The difference between London and New York, as now fixed, is four hours, fifty-five minutes, eighteen and ninety-five hundredths seconds. In the latitude of New York, the difference of meridional time is one second for every thousand and one hundred feet.

**AN ARTIST'S NIGHT LIGHT.**—An interesting conference on color as regards artificial light, has been given by M. Nickles, at Nancy. This professor spoke at great length on the power possessed by light (produced by the combustion of magnesium) to bring out certain natural as well as artificial colors with the identical brilliancy which they have by day. The presence of chloride of sodium in domestic lighting, he said, explains the impossibility of distinguishing certain shades of a dress, a flower, or a painting by night. A magnesium lamp, such as is used by photographers for night scenes, will bring out all the colors faithfully, and would permit of artists working at night with as much certainty as by daylight.

**SUGAR FROM COAL.**—Most of our readers have doubtless read that sugar has been obtained from coal; few, we presume, have believed the statement; yet it is true, at least in part, but only to the extent that a substance has been extracted from coal, which is chemically undistinguishable from sugar; but which, we presume, has no more the taste of sugar than spirits of turpentine has of the essence of lemon; both of which latter substances are, chemically, exactly alike—that is, composed of precisely the same chemical constituents. This phenomenon of chemical identity with dissimilarity of properties is due to the well known principle of isomerism.

**THE CAUSE OF FEVER AND AGUE.**—We have already, some time since, announced the fact that the fever and ague is now supposed to proceed from a certain plant or vegetable organization. This discovery was first announced by Dr. J. M. Salisbury. A recent number of the Journal of Medical Science speaks as follows of this discovery:

The real cause of fever and ague, in what are called malarious districts, is to be traced to a plant called the "Aqua Palmella," one of the lowest known forms of vegetable organism. The spores and oblong cells of this plant are, it seems, elevated by the exhalations rising up from the heated earth in the night, when the atmosphere has become cooler. The breathing in of these spores is said to be the cause of the fever and ague. Indeed, it would seem that they possess a powerful medical effect, useful to some—constitutions predisposed to consumption, for instance—yet destructive to others, through the fevers produced. It is supposed that, by proper arrangements, the knowledge of these facts will lead to the extirpation of the plants in many regions, and a more proper treatment of the disease. It will thus tend to render places habitable by white men, where before they could not subsist.



## NEW PATENTS AND INVENTIONS.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast; and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

**SMELTING FURNACE.**—Jas. P. McDougal, San Francisco, California. I claim, 1st. A smelting hearth of peculiar construction, A, B, the sloping portion, A, inclining toward C, its lower portion forming the dam-wall or ridge, B, running across the hearth of the furnace from side to side, substantially as described and for the purposes set forth.

2d. The half oval shaped refining hearth, C, conforming in shape to the smelting hearth where they join, the sole of which has a slight inclination from the flue, D, toward B, where it has a lower level than the smelting-hearth, A, for the purposes specified and set forth.

3d. The manner of feeding the fluxes and ores to the furnace by the use of the hoppers, V, V, and grooved bars or rods, W, W, substantially as described.

4th. The devices for feeding the fuel to the furnace and depriving it of its moisture by the use of the cylinder, N, and conducting pipe, c, (or their equivalents,) as herein specified and shown.

5th. The arrangement of the door-hearth, H, H, for discharging the metal and slag, substantially as described.

6th. The manner of binding the said furnace with bands of iron secured to the casing of the furnace and keyed below it, when arranged substantially as described and for the purpose set forth.

7th. The concave rockers, R, R, R, and convex rails, s, s, s, with chimney shield, L, and lever sockets, d, d.

8th. The within described improvements, whether employed singly or in combination in smelting furnaces, substantially as and for the purposes herein specified.

**SEEDING MACHINE.**—Frank A. Hill, Marysville, Cal. I claim the agitators, D, D, in combination with the beveled gearing, B and C, and connecting-rods E, E, substantially described and for the purpose set forth.

**FURNACE FOR DESULPHURIZING ORES.** William Bruckner, San Francisco, Cal. I claim the internal screw ribs or ridges arranged spirally in opposite directions so as to convey the ore alternately from end to end of the cylinder and heat it uniformly.

**GRATE BAR FOR FURNACES.**—Charles C. Bemis, San Francisco, Cal. I claim a furnace grate with bridges or barrier-plates, b, c, d, e, f, placed beneath the said grate at intervals and increasing in depth to near the flue, the whole arranged and constructed substantially as described and for the purpose set forth.

Each of the above patents were obtained through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

## RECENT INVENTIONS.

**NEW USES FOR PEAT.**—Mr. T. G. Ghislin of Hutton Garden, England, has recently invented a process for so treating the universal article of ordinary peat, by chemical and mechanical operations, as to bring it into a state in which it may be manufactured into various useful articles, either of a solid, rigid, or of a flexible character. This process is described in the London Mining Journal, as follows:

He takes any of the common kinds of peat, and having expelled therefrom, either by the application of pressure, heat or otherwise, such of the watery particles as can be easily removed, he mixes with it ground or comminuted seaweed, with the addition, if required, of any suitable gums or gum resins, such as India rubber, gutta percha, or other substances of that class, or in place thereof, or in addition thereto, may be added resins natural or artificial, bituminous substances and products of the same, such as pitch or asphalt, paraffin, stearine, or other oily and fatty matters. To give a body and firmness to the mass, chalk, talc, sulphur, silicious, and other earthy matters may be added. Waste fibrous and woody substances may be incorporated with the other ingredients when it is desired to form sheets, of the material as for floorcloths, and if the surface is intended to be printed metallic oxides, such as white zinc, oxyd of iron, or ochre, alum, and other analogous ingredients may be added. The proportions in which the several ingredients are incorporated with the peat must depend mainly upon the character of the peat and the purpose to which the mass of prepared peat is to be applied when made; for instance, some

peats will be found to contain so much unctuous, fatty or bituminous matter, and some seaweeds so much mucilaginous or gelatinous matter, that the addition of more bituminous or gelatinous matter will be unnecessary. On the other hand, the peat and seaweed may want fiber to give it strength and tenacity; waste fibrous substances, such as cotton, hair, wool, and tow may be incorporated in such cases. In other cases the peat will be found abundant in fiber, but deficient in adhesive substances. Again, for some purpose hardness and rigidity will be required, as for moulding picture frames, or producing articles which are to be ornamented by embossing, such as hook covers. For floorcloths and other coverings or articles for which the mass is to be rolled out into thin inflexible sheets, a larger proportion of fiber will be required than for solid and rigid articles.

(Written for the Mining and Scientific Press.)

**The Use of Iron Sponge for the Reduction of Metallic Sulphides, Phosphides, Antimonides, Etc.**

BY EDWARD PIQUE.

**MESSEURS. EDITORS.**—In several numbers of your valuable paper have appeared items on the above process, and in reading them I have imagined that the operators certainly went a considerably round-about way in this matter. They take first an iron ore, which contains the iron as oxyd, and reduce it to a spongy metallic state. This is one operation which requires labor, fuel, etc. Then they mix this iron sponge with the sulphurets, etc., and put it in the furnace again, which makes the second operation. Here are consequently two operations, each of them requiring labor, fuel, etc., where one operation would have been quite sufficient, and even a great deal better.

The matter is simply this: In the first operation they deprive the oxyd of iron of the oxygen it contains, by treating it with substances which, under the existing circumstances, possess a greater affinity for oxygen than the iron does. These substances are carbon, hydrogen, carburated hydrogen, protoxyd of carbon, and such like. Now, if we consider the sulphur itself to be a combustible substance, equal in its action to the above mentioned, why not mix the oxyd of iron or the iron ore immediately with the sulphurets to be desulphurized, and make one operation instead of two? What does chemistry say about this? There are a great many metals which combine immediately with sulphur, but should the same metals, in the state of oxyds and mixed with sulphur, be submitted to a certain degree of heat, a part of the sulphur will first be employed in combining with the oxygen of the oxyd, forming sulphurous acid, which escapes, and then the remaining sulphur will connect with the metal in the same way as if no oxygen had been present.

This shows quite plainly not only that the reduction of the iron ore to its metallic state is labor and fuel thrown away, but moreover that by employing the ore in its natural condition of oxyd, only about HALF THE QUANTITY would be required to obtain the same result, since the oxygen of the oxyd is itself an agent capable of depriving the sulphur of its sulphur.

The protoxyd of iron consists of one equiv. of iron + one and a half equiv. of oxygen,  $340 \text{ Fe} + 150 \text{ O} = 490 \text{ Fe O } 1\frac{1}{2}$ ; therefore 490 protoxyd of iron contain 150 oxygen, which will convert 150 sulphur into sulphurous acid. The 340 iron will further consume 200 sulphur to form sulphide of iron. The conclusion we arrive at, is that the same quantity of iron ore, which in its oxydized state will combine with 350 parts of sulphur, when deprived of its oxygen will only be able to combine with 200 parts of sulphur; consequently nearly double the quantity of the iron ore will be required when reduced to metal, than when applied in its natural state.

In connection with this matter, I wish to correct an error made by one of your correspondents in your issue of December 22d. Among other sulphides to be desulphurized by iron sponge, he mentions the sulphide of copper, and gives even the precise method of proceeding in the matter. But I am sure the Doctor never tried it, as it is a fixed fact that copper possesses a far greater affinity for sulphur than iron does, and in all the processes of copper extraction, as long as there is any sulphur present, it will certainly remain combined with the copper, notwithstanding any quantity of iron may be present, although the latter will prefer to unite with the oxygen which may be offered to it from different combinations.

## WEEKLY STOCK CIRCULAR

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING,  
January 4, 1887.

## MONEY MARKET.

There has been no material improvement in the demand for money since our last reference, although a fair amount of business paper continues to be offered. For mercantile purposes the demand has been light for some time past, but more activity may be anticipated at an early day. For the development of mining claims in the interior it is thought that large remittances will be required in the spring. A much more vigorous prosecution of the mining interests, both in this State and Nevada is contemplated the present year, and the condition of the money market favors it. The current rates in bank are  $1\frac{1}{2}\%$  per month, and in the open market transactions are made at  $1\frac{1}{2}\%$  et.; in mortgage securities  $1\frac{1}{2}\%$  et. per month is the rate.

The Savings and Loan Society declared a dividend of  $11\frac{1}{2}\%$  et. per annum out of their net earnings during the past six months. In the previous half year they divided  $10\frac{1}{2}\%$  et. per annum. The San Francisco Savings Union have declared a dividend of  $1\frac{1}{2}\%$  et. per month on terms deposits, and  $10\frac{1}{2}\%$  et. per annum on call deposits, out of their net receipts during the last half of 1886; during the first half they disbursed the same dividend.

The Import duties paid at the Custom House in this city, during the year 1886 amounted to \$7,155,913 75; in 1885, \$6,604,413; in 1884, \$6,870,156, and in 1883, \$4,688,339.

## CITY STOCKS.

During the past week Spring Valley Water Co. sold at \$59 @60 50; Pacific Insurance Co. at \$167 @167 50; San Francisco Gas Co., \$84 50; Cal. Steam Navigation 64 63 3/4 et., and Central Railroad (city) at \$40 per share. The twenty-third installment of \$10 on the South San Francisco Homestead Association will be delinquent on the 29th of this month.

The California Home Insurance Co. decided to discontinue their business at the close of 1886, and outstanding accounts are placed in C. J. Farran's hands for settlement.

## MINING SHARE MARKET.

In presenting a brief review of the mining share market for the past year, it may be remarked that at the close of January most stocks had gained considerable strength, though the transactions of the Board for that month had fallen off about \$1,000,000 from the sales in December, 1886. A better feeling manifested itself in February, and from that time until the close of April the volume of business increased, together with a very general rise in prices. The month of May exhibited a decline both in value and aggregate sales, and throughout the months of June, July and August, a marked degree of inactivity and flatness controlled the market, reaching the greatest depression in the last named month. The increased productiveness of the various prominent Comstock claims at the beginning of September again renewed confidence among dealers and July revived the buoyancy noted in the spring; however, prices were not so well maintained during the closing months of the year, with several notable exceptions, as they had been some eight months previously. The very favorable condition of most leading mines for several months past, and the very flattering appearance of the Comstock vein at present depths, gives great assurance of future prosperity. The unproductiveness of deep mining is an exploded idea, and a more united interest is now gaining ground among companies to assist in the speedy inauguration as well as completion of the great work known as the Suto Tunnel.

From a carefully compiled record of the sales in the San Francisco Stock and Exchange Board we give the following very interesting figures, extending over a period of three years:

	1884.	1885.	1886.
January.....	\$ 3,484,284 75	\$ 1,501,598 75	\$ 2,727,187 00
February.....	2,726,420 50	2,358,855 00	3,732,292 00
March.....	2,476,725 00	5,828,900 00	5,289,084 25
April.....	2,649,072 00	4,339,032 00	4,038,096 00
May.....	1,885,283 00	5,663,549 00	3,052,102 00
June.....	2,017,027 00	4,271,640 00	2,406,341 00
July.....	1,907,557 50	4,214,183 00	1,533,874 00
August.....	829,062 75	4,292,618 00	1,284,451 75
September.....	1,285,390 15	4,629,501 00	1,758,190 75
October.....	1,084,612 25	4,000,500 00	1,371,117 00
November.....	1,081,152 25	2,018,906 00	2,533,475 50
December.....	2,372,468 25	3,777,437 00	3,635,678 25
Totals.....	\$25,832,715 00	\$40,205,819 75	\$32,835,899 50

making the total sales of the three years \$107,874,428 25.

Hale & Norcross exhibited the most regular and rapid progression during the past year of any stock on the list, opening in January at \$240, improving to \$1,000 in March, receding to \$950 in April, then gradually advancing to \$1,500 in October, since which time no sales have publicly transpired. At the close it is firmly held, with bids at \$2,500. The monthly bullion returns of this company have increased from \$31,546 03 in February, 1886, to \$167,034 89 in November, giving a total for those ten months of \$1,055,419 87. This sum was produced from 22,626 tons of ore, showing an average yield of \$46 65. Ten dividends have been disbursed to shareholders out of their net earnings during the year under review, amounting in the aggregate to \$350,000. In the month of December, besides the regular dividend of \$100, an extra one of \$200 was declared, making a total distribution of \$120,000 in that month.

Savage met with marked appreciation since July last, and from that period extensive deposits of ore have been disclosed in their lower levels. In January this stock sold at \$700, steadily advanced to \$1,100 in April, receded to \$865 in July, and then rapidly improved to \$2,050 in December, closing at \$2,200 asked. The aggregate yield of bullion for the fiscal year, closing with July, 1886, was \$1,363,852 91, from 29,535 tons of ore, or an average of \$46 14 per ton. During the five months ending with November last the yield has been \$896,561 59, from 19,334 tons of ore, or an average of nearly \$45 per ton. Taking half the product of the last fiscal year, say \$650,000, as belonging to the yield of 1886, and we have a total of \$1,549,561. From July to the close of the year \$360,000 have been paid to stockholders in dividends. We learn from the mine that during the week ending December 29th, splendid ore had been found in the southeast drift on the seventh station, eighty feet southeast from Winze No. 2, while working towards the Curtis shaft.

Yellow Jacket exhibits a fluctuating record for the past year, selling at \$440 in January, \$505 in April, down to \$350 in July, then at \$370 in September, receding to \$600 the next month; in December met with a rapid advance to \$1,410, and closing yesterday at \$1,315. The amount of bullion produced by this company during the past year has been about \$2,300,000—the largest monthly yield was \$379,706, in August, and the lowest in February, \$39,550—and from this sum \$390,000 were distributed to stockholders in dividends. One assessment of \$160,000—\$150 per lot—was levied in February, 1886. From the 1st to the 24th of December \$116,712 73 have been accounted for in bullion, and that month will probably show a yield of \$160,000. The news from this claim is very favorable, and it is said that the south mine is in

proving daily. No change is reported in the north mine, and during the rainy and inclement weather of the past month neither mill nor mine sustained any damage.

Crown Point increased in market value from \$565 in January to \$1,300 in the month of April, sold at \$950 in May, and \$1,650 in June, dropped to \$700 in July—during which month the bullion returns were meagre and amounted to only about \$37,500—rallied to \$825 in August, receded to \$880 in September, and from that time improved to \$1,200 in December, and during the past week sold at \$1,300. The heaviest receipts of bullion during the twelve months of 1886 were in February, amounting to \$155,461 63, and the lowest in July, as above stated. For the year the yield has been \$1,273,563, from say 33,377 tons of ore; previously the mine produced \$217,748 14, making a total of \$1,491,251 14. During the past year this company declared six dividends, \$50 per foot in March, \$80 in April, May and June respectively, and \$50 in November, and the same amount in December, aggregating \$234,000.

Gould & Curry sold at \$885 in January, reached the highest point during the year in February—\$1,060—steadily declined to \$450 in November, advanced to \$775, and brought \$625 @620 during the past week. During the fiscal year ending November 30th, 1886, the bullion product of this company amounted to \$1,635,333 92, being the yield of 33,163 tons of ore. March produced the most of this sum, \$174,066 46, and July the least, \$105,446 49. The bullion received in December was \$103,427 14. This lessened yield is due to the necessary general repairs required at the mill, obliging them to run at half capacity during the greater part of the month. The ore product of that month was about 2,350 tons, of which 1,550 tons were delivered to the Gould & Curry mill and 700 tons to custom mills. Three dividends were paid in 1886—in January \$50 per foot, in April \$30, and in June \$80—making an aggregate disbursement of \$252,000 to stockholders.

Chollar-Potosi improved from \$139 to \$300, receded during the succeeding seven months to \$102, and in December sold at \$245, closing yesterday at \$219. In the year just closed this company received about \$350,000 in bullion, from say 47,800 tons of ore. A large amount of this ore was of a low grade and was sold at the mine at an average of about \$3 per ton.

Empire opened in January at \$250, sold in March at \$250, then declined to \$75 in September, and from that period advanced to \$207 in December, selling during the past week at \$200. From a very full statement furnished us in regard to this mine, we condense the following: Bullion product of 1886, \$486,771 78; dividends disbursed to stockholders, \$32,400; and the amount of ore reduced was 19,750 tons.

Imperial advanced from \$113 in January to \$177 in March, gradually receded to \$94 in August, then improved to \$145 in December, selling at \$130 during the past week. This company shows a bullion yield of about \$99,150 in 1886 from 33,322 tons of ore. During the same year dividends to the amount of \$176,000 were paid to shareholders.

Ophir rose from \$345 in January to \$750 in March, then rapidly receded to \$83 in November, rallied to \$235 in December, selling at the close at \$155. During the fiscal year closing with November last \$483,324 69 were received in bullion from 11,163 tons of ore, showing an average yield of about \$40 per ton. In October of 1886 an assessment of \$72 per foot was levied, and in December one of \$60.

Alpha rose from \$200 in January to \$370 in February, fell to \$271 in March, advanced to \$450 in the following month, then receded to \$95 in August, since which time it has been out of the market, until the close of December, when a few shares were disposed of at \$150; yesterday it sold at \$200. During 1886 three assessments were levied, amounting in all to \$144,500.

Belcher sold in January at \$145, advanced to \$377 in April, then declined from month to month to \$62 in November, rallying to \$145 in December, and selling during the past week at \$130 @132. Three assessments were asked of the stockholders during the year under review—\$60 in March, \$45 in July, and \$30 in October; total, \$145,520.

Overman fluctuated very materially during the past year, selling at \$41 in January, \$95 in March, then at \$37 in June, and \$50 in July, receding to \$17 in December, and at the close brought \$17. This mine produced \$7,953 from February to September, 1886. Six assessments throughout the year required from the stockholders \$208,000, of which sum only \$152,346 has been collected to this date.

Bullion opened at \$33 in January, advanced to \$117 in April, gradually receded to \$10 in October, rallying to \$16 in December, and at the close of that month improving to \$30 @35, assessment of \$10 delinquent, and closing yesterday at \$30. Seven assessments of \$10 each were levied during 1886 amounting to \$175,000.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last amounted to \$59,349 75.

**"NEVADA AND COLORADO."**—The Reese River Reveille has an article under the above caption, in which it institutes a comparison between the Smith & Parmelee mine—which the "Journal boasts of as having produced in one month, with seventy-eight stamps, bullion valued at \$33,500, in currency—and the Great Eastern, at Austin, which has been ridiculed as a "shoe-sting" mine. In the month of November, this mine yielded bullion valued at upwards of \$50,000 in currency, employing twelve stamps for twelve days. Taking into account the difference in the cost of mining and reducing—said cost being about fifteen dollars per ton in Colorado, and fifty dollars in Austin—the profit on the Smith & Parmelee was only \$12,000 per month, while on the Great Eastern it was over \$29,000.

The new fire-alarm hammer is much more efficient than the old one. The stroke of the bell can now be heard in every part of this city.

R. H. STRETCH, State Mineralogist of Nevada, has been appointed by Gov. Blaisdell, Commissioner from that State to the Paris Exposition.



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GOLD IN CANADA.—The Madoc gold mine, near Belleville, in Canada, was discovered a few months since, in the following manner: A man by the name of Richardson, having been told that there were indications of copper on his land, that metal having been found in the neighborhood, commenced to prospect for it. After blasting away for some two months, he came upon a large deposit of brownish earth, filling a sort of pocket in the rock. Some two or three cart loads of this had already been removed and thrown away, when an old gold miner, passing by chance, took a pan of it to a neighboring stream, and obtained nearly an ounce of gold. The experiment was repeated, with a yield of three ounces. The news spread abroad, and a Boston man, named Carr, offered to pay Richardson \$20,000 for the mine before the 10th of December next, which offer was accepted. Before he left, a building was erected over the shaft, fastened by two pad-locks, the keys of which were pocketed by Richardson and Carr respectively. Neither can enter until Carr returns. Should he not do so, Richardson will work the mine himself. This has a singular look to us Californians. The story should be taken, perhaps, *cum grano salis*.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County—

From the Miner of Dec. 29th: The Mow-er boys are finding very hard rock, averaging from four to six inches to the shift. . . . The Schenctady Company's first letting of 300 feet of tunnel on the old Tarshish property, is completed, and the contractor, Mr. Wilson, having received instructions to continue on until a vein is opened, will keep pushing the work vigorously ahead.

The question whether the Washington mill will produce bullion from Morning Star ore is settled. Although the first brick could not be got ready for Christmas, they are saving up the amalgam for a New Year's report.

The contractor on the James Barrett tunnel, after the first run of twelve feet, has been encountering very hard working rock. Yesterday the workmen thought they saw a change for the better.

From the Silver Mountain Bulletin of Dec. 22d: The Washington mill has been crushing all the week, and we are informed that the machinery works smoothly. . . . The Del Monte are making arrangements to sink a hundred feet. It will probably take them about three weeks.

From same of 29th: The yield from five thousand pounds of Morning Star ore is estimated by good judges to be not less than 1,200 pounds of amalgam. It was not melted at our going to press.

At the delinquent sale of Mountain stock, only twenty-five shares were sold, the remainder being all paid in. The tunnel is being driven day and night, and is now in over one thousand feet; and, unless the estimated distance to be run is very wide of the mark, they must be within two hundred feet of the monster lode. The prospects of the Mountain are brighter to-day than at any former period.

## Amador County—

From the Ledger of December 29th: Mr. Fenton and others have taken the Spanish claim, and will commence operations on it next Monday. They intend to push work on it night and day until the mine is fully developed. This claim is situated on the same range with the Coney & Bigelow mine, and immediately south of, and adjoining the Austrian.

A lucky fellow, who wishes us not to mention his name, picked up a nugget not far from Clinton, the other day, that weighed over thirteen ounces.

The late heavy rains seem to have inspired our placer miners with new life and hope. From all parts of the country we hear of more prospecting and "good strikes" than for years before.

Tubb's mill was started on the 17th of December, and worked well.

## Calaveras County—

The Courier has the following: "It has been many long years since our miners were in better heart than in the present year. Capitalists are beginning to appreciate their lodes at something like their true value in consonance with their own estimate of their worth; hence, there never was a fairer show to get outside help for their development than at the present time. We have conversed with several old miners who have been stumping the far-off regions of Montana and Idaho, and they all say the chances are a hundred fold better here at home.

## Colusa County—

The Marysville Californian of the 27th of December, says: We saw yesterday a fine specimen of copper which had been put through the smelting works of the Lyon Company, which is situated about three miles from Ashton. Out of seven hundred pounds of ore which was put through the process, five hundred pounds of pure copper was obtained.

The Marcuse oil well was recently visited by the editor of the Clear Lake Sentinel, who gives the following particulars: "This well is situated in the foot-hills of the coast range, about eighteen miles west of Colusa. The company have an eight horse-power engine to persuade the drill to penetrate the hard rock, with which they are constantly operating—working night and day in search of that which will throw so much light on the world. At the depth of thirty-eight feet the first indication was perceived. Two fissures have subsequently been penetrated, but as yet no experiment has been made with the pump. It is the intention of the company, we believe, to insert the pump when they arrive at the depth of 600 feet. This company has expended about ten thousand dollars on their well already, and

are determined to sink down 1,200 feet should they fail to find a sufficient supply when they try the pump."

## El Dorado County—

A Placerville letter to the Alta, dated Dec. 27, says: Our quartz interests are still on the upward swell, prospecting lively, and the results gratifying all around. There is no let up to the rich prospects obtained from the Decomposed Lode, and when we get down to the hundreds in depth something wonderful may be expected. The Poverty Point lodes are improving daily. The Perseverance mine is being worked by Sam. Ten Eyck. He has reached a depth of seventy-five feet, at which point the ledge is over five feet wide; and he is taking out plenty of fifteen dollar rock, and intends going down two hundred feet before drifting.

On Grizzly Flat, at the old Eagle mine, they have taken out rock that will average sixty dollars per ton. The Stooly, a continuation of the same ledge, has lately been purchased for a large amount, by a Sacramento company, and a mill will be erected at once. All this is very encouraging, but the Sierra Nevada, formerly the Knox, has led the van. It is owned by a Boston company, is 3,500 feet in extent, and has now a shaft 114 feet deep on a ledge six and a half feet wide, of an excellent quality of rock. The company have now in process of erection, a forty stamp mill, hoisting works, etc. The mill will be running in about twenty days; the hoisting works are complete, and now in operation. All through the southern portion of El Dorado the utmost activity prevails; yet there are plenty of rich mines for capital to develop that are now idle for the want of it.

A despatch from same place, Dec. 26th, says: The Woodside quartz mine, at Georgetown, still yields quantities of gold. The decomposed quartz lode near this city is growing richer daily, and shafts are being sunk for three miles along the vein, and all prospect rich.

Some of the most valuable blue gravel claims in the State are now being opened, on one of which a fine mill has already been erected, and it will soon commence crushing cement, which prospects very rich.

## Mariposa County—

From the Gazette of Dec. 29th: McKee and Flannigan's mine, situated about a mile to the east of Greeley's sawmill, exhibits brilliant prospects and promises a rich fortune to its lucky owners. They have taken out three tons of rock which is expected to yield from \$10,000 to \$15,000 per ton, besides a large quantity that will pay at the least calculation from \$30 to \$50 a ton. The proprietors are maturing their preparations to erect at once a 10-stamp mill, for crushing purposes, and if the prospects warrant it they will add ten stamps more. The vein is five feet in thickness, and is described to us by an eye witness as very rich in appearance.

During the storm of last week, the water was five feet deep in Hite & Co.'s quartz mill. Considerable damage has been sustained by the overflow of the river on both sides, of which we shall hear more particulars. River mining is suspended for the season.

## Nevada County—

From the Gazette of Dec. 28th: On Wednesday last, E. K. Holmes picked up a quartz specimen on a pile of tailings near the mouth of Wood's Ravine, containing two ounces of gold.

From the Grass Valley National of Dec. 26th: On Monday last, Z. Denman picked up, on the old Day diggings, a specimen which weighs thirty-seven ounces, and is nearly solid gold. He was offered \$660 for it.

From same of 27th: The Empire mill, on Ophir Hill, started up again yesterday. The mill has been shut down for the past ten days on account of the large quantity of water in the mine. The mine has now been pumped dry and arrangements have been made that will prevent a recurrence of this thing. An improvement is being made in the way of putting in blankets. The mine is looking remarkably well just now.

The sulphurets works at the Eureka mine are now completed, and they are only waiting for the arrival of Mr. Deetkin, the gentleman who is to have them in charge.

From the Grass Valley Union of Dec. 22d: The New York Hill Company now has about four hundred and fifty loads of quartz lying above ground, and the Rocky Bar mill commences crushing to-day. The rock looks as well as any yet taken from the mine, which is compliment enough for it. The new pump is now working to good advantage.

The Amador Ledger says: William H. Hooper, now mining in Grass Valley, Nevada county, informs us that one day last week he pounded out in a hand mortar, five

thousand, five hundred and thirty dollars. Such rock as that is (not) hard to beat.

EXCELSIOR.—From the Meadow Lake Sun of Dec. 22d: The machinery for the Reduction Works has at length arrived, and the mill will be in readiness to commence operations with the New Year.

We are pleased to learn that the Eagle Company have received their new machinery, and it is hoped, ere another week passes, that the mill will be in complete running order. They are pushing the work on their ledge with zeal, and are taking out large quantities of good pay rock.

A gentleman writing from Carlisle, a mining camp near Meadow Lake, informs the Transcript that the town is quite lively, and the U. S. Grant mine is being worked night and day, turning out first rate rock. The mill will be kept in operation all winter.

## Placer County—

From the Herald of December 29th: Columbia's Pride is the name of a new quartz ledge recently located by Neal McDevitt and others, about a mile west of Ophir, near Hathaway's ranch, on Auburn Ravine. The rock is rich in fine gold, and easily crushed. The company are now getting out a number of tons of rock, which they intend to have crushed at the Golden Rule mill at Stewart's Flat.

Gradually our valuable quartz mines are working their way into notice, and men of means are beginning to realize the fact that "Auburn District" contains some very rich quartz mines. The recent rich yields from the Mallett, Wells, and other veins, demonstrates this fact beyond a doubt. Numerous ledges are now being worked, and in the course of a few months, from what we have seen of the rock, will, by mill process, prove rich.

From the Dutch Flat Enquirer of December 29th: We understand that the Yuba company's ditch is now all right, having been obstructed but a few days by a tree falling across and breaking the flume just below Alta. Mr. Holmes, the superintendent, soon had workmen on the ground, and but a day or two elapsed before the accident was thoroughly remedied, and the waters of the Yuba now boom with their accustomed velocity to the glad miners of Gold Run.

## Plumas County—

A letter from Mineral Township to the Plumas National of December 22d, says: Mining items at present around this portion of Plumas are not very plentiful. The miners have not had enough water to sluice with advantage, and drift diggings directly around this neighborhood will not pay over five dollars per day to the hand. Scotty and Garrett, at New Boston, are doing pretty well, and so are Hamp, Brown & Bro. Squire Jacks is likewise on hand with his little wages—five dollars per day. Squire Metcalf has commenced matters in earnest, and we expect soon to hear of Ed.'s taking out big pay. Jackson, Akers & Co. are getting a good ready to sluice off a few acres of Grub Flat gravel.

## San Bernardino County—

P. Beandry's Slato Range Quartz mill was recently burned by Indians. Twelve houses connected with it were burned also. Loss, \$50,000.

## Shasta County—

From the Courier of December 22d: The work continues to progress on the Red Warrior claim, notwithstanding the bad state of the weather. At last accounts a lode of very rich silver rock had been struck.

Both the Mammoth and Potosi mills have stopped running for the present—the former on account of the difficulty of hauling rock over the soft roads. The water comes into the Potosi shaft so rapidly that the pump has to be kept running constantly to keep it dry.

## Sierra County—

From the Messenger of December 22d: "Alturas" informs us that at Council Hill and other places on the south ranges of the county, some of the miners had commenced piping a week or so ago, and that it was then raining at La Porte.

The Pittsburg Gold Mining Company, of Potosi, was incorporated Dec. 15th. Capital stock \$96,000.

From the same of Dec. 29th: We have recently seen a specimen of rock from the Vienna ledge which was full of fine gold. The ledge is being developed. . . . The storm at Howland Flat caused some damage by carrying away a few flumes and washing some dirt in dumps not well protected.

The following items are from Port Wine: A. Pedanet & Company's stock dirt washed away, to the amount of about \$1,500 or \$2,000.

The Canny Company's ditch and flume on Bunker Hill is broken down.

The Eagle Company's main tunnel caved in, catching several men inside, who barely escaped by crawling out on all fours.

The Monte Cristo Company lost their tailings and stock dirt.

The Golden Gato Company sustained a loss in timber; shed and much of tunnel filling up with tailings from Monte Cristo Company's flume breaking down, and a tree falling over track, reservoir and dump house.

Alleghany items: The Fac Simile mine is standing for the present. The Union mine is still following the vein with good prospects. The Twenty-One has sunk on the vein to the depth of eighty feet, the vein increasing in width, and sulphurets more abundant. They are rigging up a new pump. The Oak Flat mill is about to be started on some very rich rock. The Greenback mill has made a run of one week, but I could not find out the result. The Masonic and Highland companies are not working as many hands as they did a few weeks ago, owing to some very hard rock. Smith's Flat is still contributing a small share of ore.

From Chip's Flat: The Yankee Company, at Balsam, have out 2,500 loads of pay and were about to wash it out.

The Mammoth Branch were working three shifts and getting along rapidly.

The Morning Star expects to be in pay very soon.

Both Newell's and the Oak Flat mill were crushing.

Some rock from the Spoon ledge, that he saw last week, was richer than ever.

The Twenty-One have gone down with a shaft about seventy feet, the rock increasing in quality and quantity.

The diggings at the Minnesota are also paying well.

It seems to be the general opinion that the work last season on most of the Bear Valley ledges was so injudiciously done that it will be better to commence anew in the spring rather than to take advantage of what has been done.

## Yuba County—

From the North Californian of Dec. 27: The Blue Point Gravel Mining Company, at Smartsville, have engaged Mr. Stevenson, a man experienced in the use of nitro-glycerine, to introduce the oil and test its value for blasting purposes. The tests will be made in the company's bed-rock tunnel and in blowing up of the hills and cement banks. Between 5,000 and 6,000 kegs of powder are now used annually at this place for blasting. If the oil will do one-half the work claimed for it by its advocates, farewell to powder. It is intended that these tests shall be public, and all practical miners and others are solicited to be present. Every facility will be given those interested to make themselves thoroughly acquainted with the material, the mode of handling and working with it.

A dispatch from the same place, Dec. 29: The Pennsylvania mine, at Brown's Valley, has a fine prospect ahead. The company is now down on the ledge one hundred and sixty feet, at which depth it is from twelve to fifteen feet wide, and pays from \$20 to \$45 per ton.

The Appeal of January 1st, says: The new battery of the Pennsylvania mill, at Brown's Valley, will be started this morning. Other parts of the new mill have been in operation for several days, but the sixteen stamps will be set in motion this morning for the first time, with a capital of 100 tons of rock within the reach of the feeder, taken from over five hundred feet below the surface.

We learn that the Andrew Jackson Company will start up their new mill in a few days.

Camptonville items crowded out last week: Hon. B. P. Hogg is just finishing his tunnel, and is ready to open the Union claim with good prospects. The claims at Young's Hill, Galena Hill and Oak Valley are paying very well. The quartz claims in this section are looking up. One-fourth of the Fiddletown ledge, at Pike City, was sold the other day for one thousand dollars. The copper claim of McKean, Newbery & Co., looks well, with strong indications of a very large ledge.

The Babb Company, near Timbuctoo, has struck into the old river bed, and fine gold can be seen in the gravel. . . . The Peterson Company have completed their upper tunnel cut and flumes, at a cost of \$12,000. . . . The Pittsburg & Yuba River Company are starting with a bank of thirty feet. Eight or ten feet of the bottom is Old River dirt, some of which is very rich.

## NEVADA.

## Esmeralda—

The Union of Dec. 22d, in an article on the mines of Nevada, summing up the progress of the year, says: In Bodie District the ore is easily mined and easily worked. The Empire Company's claims are in the most forward state of development. The next in order is the San Antonio mine ad-



joining upon which has been sunk a shaft to the depth of one hundred feet upon the ledge, at which point a body of pay ore has been discovered some five feet in thickness. The Crescent location next adjoining is one of the most valuable in the district, upon which a shaft has been sunk to the depth of one hundred and seventy feet where a fine ledge of gold bearing quartz has been developed.

#### Hubbaldt—

From the Register, Dec. 22d: Several old settlers, who have during almost all the past three years been interested in the claim, have re-located the old Westerfield ledge, and are now sinking a working shaft, intending to keep on until they bring the mine up. The ledge is 7 feet wide, and assays rich in silver—with copper and some gold.

The Essex has been followed by drift for some distance in two directions from the point at which it was struck. It maintains its width and richness, and may be accounted a proved and reliable mine.

Work on the North Star progresses finely. The tunnel is described to us as a beautiful work, high and straight; and yet it was pushed 54 feet in 9 days. Four men are running the tunnel, while four others are sinking a shaft on the ledge.

The Reveille ledge has been conveyed to the Knickerbocker Company, organized in the State of Maine.

We have seen a splendid specimen of quartz from the Gem. It weighs probably 70 pounds, and is corded in every direction with rich chlorides. The ledge has been followed about 70 feet from the point of striking, and continues of a substantial character, carrying about 18 inches of this rich rock. Fall is working a lot of ore from the Gem at the Pioneer mill.

#### Reese River—

From the Reveille of Dec. 19th: Eight tons of ore from the Chase ledge, in New York Canon, was reduced at the Metacom mill. A bar of silver valued at \$1,603 was the result.

From same of 21st: In Danville District, the Vanderbilt has been opened to the depth of 20 feet, and shows greatly improved ore. At Hot Creek work progresses slowly. In Isveille District new discoveries are almost daily made, and the ore is identical in all, with two exceptions, the "Fisherman" and one other. These show a very rich ore of a deep blue color.

The mill of the Consolidated Company at Hot Creek was to commence running on the 1st of January. Charles Coorn has purchased the Shenandoah, and is running a cut 20 feet deep through the ledge.

Same of 22d: The new Metacom mill performs beautifully. The battery is pronounced to be perfect. Owing to the difficulty of obtaining the proper quality of lumber for the construction of barrels, the amalgamating room is furnished with but three instead of six barrels, and the mill will be temporarily stopped to make up the required complement. The ore that has been reduced from the Metacom ledge has yielded \$135 per ton.

Col. Buel yesterday brought in \$9,000 from his mill at Silver Bend. The yield per month of his 10-stamp mill is nearly \$20,000. The Highbridge mine is looking better than ever.

Same of 24th: The little Timoke mine—the silver "shoe-string" of Lander Hill—will make a handsome Christmas present to its eastern stockholders. W. F. Leon, its Superintendent, will transfer to-day, by telegraph, the sum of \$9,500, the result of five weeks' run—equivalent to five per cent. for thirty-five days on the capital stock of the company.

Same of 26th: The locations in Northumberland District have been much improved of late by a little work. We will mention particularly the Central, Alta, Viola, Independence, and Ten Thousand a Year, all of which show good ledges and excellent mineral at the depth of a few feet below the surface. The Central has an incline shaft of 8 feet in depth, showing fifty dollar ore. The Viola has a 4 foot cut. The Alta has a vertical shaft of 12 feet showing a 2½ foot vein. The Independence has a 4 foot vein. Ten Thousand a Year has an incline 7 feet in depth, with a vein of 8 inches. The ore has assayed \$960.

#### Washoe—

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Territorial Enterprise, Dec. 20th: The pumping arrangements at the Bonner shaft of the Gould & Curry mine have caused the water to recede in the shaft until the mud and sediment in the bottom is nearly reached. It will take some little time yet before that is got out, when the sinking of the big shaft will be resumed. Large amounts of a very rich character of ore, in which native silver can be seen in

abundance, are being taken from the lower levels of the Yellow Jacket mine at Gold Hill.

From same of 23d: Dall's mill in Washoe was totally destroyed by fire on the evening of Dec. 21st. A new water wheel had just been completed at a cost of \$15,000. This mill was insured by the Pacific Insurance Company for \$25,000. Several miners have taken a contract to run an incline to the depth of 125 feet on the Plato mine, at Gold Hill. They receive for the work \$7.50 per foot, the mine furnishing the timbers. . . . The Petaluma mill, in Lower Gold Hill, is fast approaching completion, and will be in running order within two weeks. The motive power consists of a 29-horse power engine, which will drive sixteen 700-pound stamps and six Wheeler pans.

Same of 28th: The great amount of water recently struck in the new shaft of the Sierra Nevada mine proves too much to contend with, by means of the bailing apparatus, therefore the large pump of the company formerly used is now being placed in the new shaft.

Same of 29th: The Yellow Jacket Company intend sinking the south shaft of their famous mine one hundred feet deeper. A new reel has been placed in position and other machinery prepared for the purpose, and the work of sinking will soon be commenced.

From the Virginia Union of Dec. 21st: Several rich lodes in the vicinity of Crystal Peak have caused some excitement, but the only one that has been prospected to any desirable results is the Truckee Ophir. Several tons of ore, worked at Dall's mill, near Franktown, gave a return of thirty dollars in silver and gold to the ton. The ledge is large, finely developed, with clay casings. The company will in the early spring erect a mill.

From same of 22d: The Gold Hill mill shut down on Saturday night to overhaul their boiler and make some repairs to other machinery about the mill. The company have a large amount of rock on hand at the mill.

Same of 24th: We understand that suit is about to be commenced against the Savage Company by San Francisco parties holding a controlling interest in the Bajazet & Grass Valley stock. As it will involve the title of the Savage to the vein, they are now working to the east, and which is the northern extension of the rich deposit being mined by the Hale & Norcross, this will be the most formidable controversy into which any of the Comstock companies have been forced since the days of '63.

The Gold Hill News of 27th, says: The new carpenter shop of the Savage Company, and the new building over their dump-house is about completed. The mine is now in a condition to produce a great deal more ore than can be taken away. The present muddy condition of the roads proves a great drawback to our mining interests.

#### ARIZONA.

A letter dated Prescott, December 16th, has the following: Major Coffin, of the Bully Bueno mine, is taking out very rich rock. Judge Flower has cleaned up remarkably well at the Sterling mills. Ore yields from \$80 to \$100 per ton, and no mistake. The gold is in town, and speaks for itself. From thirteen tons he secured seven pounds of gold. Woolsey's last run at the Agua Fria mill paid \$35 per ton. The ore was from the Ticonderoga lode. Tyson & Coulter now have their mill in good order, and by running through their new pan some 1,100 pounds of tailings they got \$139.

#### BRITISH COLUMBIA.

From the Victoria Colonist of Dec. 11th: Several members of the Gold Hill Company on French Creek, arrived here last evening. This company has run a tunnel 130 feet into the hill, and have taken out a large amount of gold in pieces of from \$38 downwards. They left part of the company wintering in the tunnel, and had everything in a state of readiness for hydraulic mining the whole of the bank next season. The tunnel is known as the Blue Nose Tunnel.

About fifty persons will winter on the creek. On McCulloch's creek there were very few persons, and only one company working. Only about sixteen persons will winter at Seymour.

Shep Bailey sent word to his partners to come down at once to Kootenay, as he had struck new diggings higher up that river much richer than anything ever found on French creek.

Some picked ore from the Stuart Ledge, Hixon Creek, Cariboo, assayed at the rate of \$6,000 per ton. Gold is visible in every piece of a lot of 1,200 pounds brought down recently.

#### COLORADO.

From the Journal of Dec. 11th: Deacon Baxter has at length reached pay on the "Baxter and Crispian lode," situated on

Spring Gulch. At a depth of 114 feet he has uncovered a fine crevice of pay ore, eighteen inches in width. . . . The "School claim" on the Notaway lode was sold last week to the Notaway Company for one thousand dollars cash. . . . The Empire mill is now running on ore from the Smith & Parmelee mine. . . . The Empire State, Texas and Tinder Gold Mining Company have commenced operations on the Kansas lode, Nevada district, and at a depth of forty-two feet have developed a three-foot crevice of very fine looking ore.

The Black Hawk Mining Company is now running forty stamps on ore from No. 1 Gregory. The mill located at Gregory Point is kept steadily at work crushing ore from No. 2 Gregory, with satisfactory results. . . . The Corydon Company have been mining steadily for the last six weeks on the Corydon lode, and have a fine crevice of iron at a depth of about 220 feet. The company are working six hands, and have been getting out about six cords per week.

The old Wright mill is being repaired for work on Gunnell ore for Mr. Fitzpatrick. The Quartz Hill tunnel is now in 170 feet.

Assays of ore from the Herkimer lode, near Georgetown, Clear Creek county, show \$1,185 to the ton. . . . John Hite is working the Sapphire lode near the Gunnell, with good prospects.

On James Creek, Cobb & Clough have struck a good lode with pay at the depth of twelve feet. They are now down twenty-six feet, and have a crevice of eight feet. The Stanley Company are doing well.

The Bay State Company, formed in Worcester, Mass., broke ground for the mill on Sept. 1st, in Nevada Gulch. The mill is now complete. It has a vibrating engine of 25-horse power, a Dodge crusher, a Swansea desulphurizer, and a barrel for amalgamating, into which steam is introduced through the hollow shaft, which is perforated with holes for the purpose.

#### IDAHO.

From the Avalanche of Dec. 15th: Messrs. Jackson & Burnham have been experimenting on the Vulean ore. By assorting the rock and working the decomposed and solid portions separately, paying results have been obtained. The ore can be mined and milled at an expense not to exceed \$20 per ton. The progress made by recent experiments in saving the gold and silver shows that the Vulean ledge is rich enough to pay a large profit.

The Shoebar mill starts up Monday next on one hundred tons of Vulean ore, and will probably make a test of the Dashaway ledge also.

Fred Warnke and others interested in the Discovery ground of the Sherman ledge, Flint District, are running a tunnel in from the gulch below to strike the ledge. The formation is such that a seventy-foot tunnel will tap the ledge at an equal depth. No work has been done in the Discovery hole since last September, where the ledge shows a prospective width of over eight feet, and a silver bearing indication that is highly satisfactory.

An Iowa company are intending to prospect the Forrest ledge, by means of a 300-foot tunnel. The two mills in Flint District will be ready for use early next month. Roasting furnaces are being erected.

From what we learn, the conduct of the men employed in the Cosmos mine was very reprehensible. Those employed in the mill took the report of the attachment with coolness. The men were paid, and the suit dismissed at once. There is no news here that the company in New York have dishonored a draft, or think of doing so.

From Silver City, Dec. 23d: The Reynolds Creek Coal Company near here, who have a tunnel in the hill over 200 feet, are confident from present appearances of finding coal in paying quantities.

#### MONTANA.

A letter to the Alpine Chronicle, under date Nov. 15th, says: "The mines, so far as I have seen, are different from those in California, being confined to what they call 'gulches' in California they would call them 'ravines,' and as a general thing, there is very little water in them, and not far enough to work them to advantage. Wages are low this fall. I know of men working for \$40 per month, and hear of others working for one dollar a day, to lay in a little grub for winter. About half the emigration from the States took the back track, and went down the Missouri river this fall; and before spring about half of the other half will wish they had done the same thing."

From the Herald of Dec. 6th: G. B. Thomas arrived in town on Monday last, direct from the copper regions on the Muscleshell. Thomas brought with him some 1,500 pounds of ore, from the results of the assay of which a correct estimate can be had of the value of the mines. We are persuaded that we do not overrate the Muscleshell ores

one whit when we say they are among the richest ever dug from the bowels of the earth in any country.

We are informed that a new dry gulch discovery has been made in the vicinity of Lost Horse, which promises to be among the best discoveries made in this section of the Territory this season. The surface of the pay dirt is reached at a depth of thirty feet, and prospects sixty cents to the pan.

We ascertain that several gold discoveries have recently been made between Indian and Beaver creeks, distant from this place about thirty miles. The new diggings comprise five dry gulches, the prospects from each of which are reported rich. A great number of claims have already been taken. The diggings are said to be unusually shallow, and so rich that, with the necessary water, miners will realize their \$50 a day, without any unusual exertion.

#### OREGON.

The Dallas Mountaineer says fine specimens of gold and copper bearing quartz have been found on Eagle creek. The city is rapidly filling up with people, the recent unoccupied houses are all filled.

A correspondent at Ellensburg writes to the Jacksonville Sentinel: Do you know that in this neighborhood there are good diggings that pay \$50 per day to the hand? At Randolph, at the mouth of the Coquille river, they have discovered the old ocean beach, some three hundred feet above the beach of the present day, and about three miles inland. At Randolph, the beach diggings of early days were very rich—\$1,000 per day being made—no doubt fed by this older beach now found. It is most likely that the "streak" at Randolph is much older than the one at "Gold Beach," as the latter is only about 80 feet above the present beach, and the sand is not so plentiful nor so rich. We look for rich discoveries next summer. In prospecting for that "streak" at Randolph, they intend boring, as it is covered with 30 feet of earth and thickly set with timber. A creek cut through and exposed it.

### Professional Cards.

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29d

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Electro-Magnetic Physician, CURES ALL CURABLE DISEASES, BY THE CONCENTRATION of the vital forces. Nature's own method of cure. The blind made to see, the deaf to hear, the lame made to walk, and the sick healed. Come and see the afflicted at the rooms. They will speak for themselves. The poor treated free from 10 to 11 A.M. and 1 to 5 P.M. Operating rooms, Crim House, 523 Kearny street, between Sacramento and California. 21v13m



## Mining and Scientific Press.

W. B. EWER, SENIOR EDITOR.

C. W. M. SMITH, W. B. EWER, A. T. DEWEY.  
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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the MINING AND SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office. San Francisco, Jan. 11th, 1866.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

## San Francisco:

Saturday Morning, Jan. 5, 1867.

## NOTICES TO CORRESPONDENTS.

"J. D."—AMBER, so extensively employed as mouth-pieces for meerscham pipes and cigar-holders, is believed to be a fossilized vegetable gum or resin. Anciently a fabulous origin was attributed to it. As it was found on the sea-shore after a storm, it was said to be the solidified tears of the sisters of Phæton, or of sea nymphs. It is of a yellowish color, frequently streaked with milky white, the yellow color being semi-transparent. Those specimens which have a clouded milky appearance are the most highly valued, as the clear yellow can be imitated by recent and cheaper gums. It is singularly electrical when rubbed, developing negative electricity to such a degree in manufacturing it into the forms in which it is sold, that the workmen are sometimes affected with nervous tremors, and they are obliged frequently to change the pieces they handle.

It is found on the Baltic coast of Prussia, either washed ashore after a gale, or entangled in masses of seaweed. Mines of it are also wrought in Prussia. It is found in this country at Amboy, N. J.; at Gayhead, Martha's Vineyard; and at Cape Sable, in Maryland. Leaves of fossil plants and tropical insects are sometimes found imbedded in it, a fact that has given rise to some pretty poetical conceits, as an instance of which we may mention the comparison made by that celebrated and witty divine, the Reverend Sydney Smith, in regard to the English statesman Canning, viz., that "his position was like that of a fly in amber," the insect itself being an unimportant fact, the wonder consisting in how the deuce it got there. In the East it is highly valued, and has been used as a form of concentrated wealth, as are diamonds and other precious stones. When heated, it exhales an agreeable odor, and for this, among other reasons, is in great request as mouth-pieces for pipes.

"NEW GRENADA MINER."—Your query is one which, to do it full justice, would require a rather voluminous answer. The losses occasioned in hydraulic and cement mining may be divided into two classes—one arising from the imperfect pulverization of the cement, may be obviated by employing crushing machinery; the other, and more general loss, takes place in consequence of the loss sustained by what is termed "float gold" passing off in a finely divided state. We know of no suggestion which could be offered to remedy or palliate the latter evil, unless by employing a long series of Rittinger's Pointed Boxes, which are described in this number, the overflow being made to pass from each series as much as possible over a well amalgamated plate maintained constantly clean.

"H. B."—"ASBESTOS" is from a Greek word of the same name. It is found to some extent in California, in the filiform condition, and very largely in the semi-formed or compact state. You cannot get a patent upon it for lamp-wicks. It was used for this purpose by the ancients.

A VALUABLE PUBLICATION.—We have received from H. H. Bancroft & Co. a copy of "Molesworth's Pocket-Book for Civil and Mechanical Engineers." It is a very complete compilation of the formulae and tables so often required for calculations in the field and elsewhere, but which few engineers pretend to commit to memory. It is in compact and convenient form, and will be found useful by the general public as well as by professional engineers. It is the first American from the tenth London edition.

OUR NEW TYPE will be appreciated by the reader for its clear, plain and bold face.—It is California made type, and the first font of the kind used on the Pacific Coast. The "metal" appears "tough" and we believe the "face" of the type will prove very durable.

## VOLUME FOURTEENTH.

Again the march of time has brought us to the commencement of a new year and a new volume. With the present issue we commence the "fourteenth" semi-annual volume of the MINING AND SCIENTIFIC PRESS. In thus entering upon a new term, it is needless to inform our patrons that the PRESS has kept full paco with the general prosperity which has attended mining operations of late throughout the Pacific coast, and that we take a just pride in recording, year after year, fresh evidences of success in our efforts to furnish our readers with a first-class mining journal, and one which shall compare favorably with any publication of the kind, wherever it may be sought for. As a special evidence of our desire to keep fully up with the times, and to make good our intent just recorded, we may call attention to the improved appearance of our paper to-day, which is printed on NEW TYPE of beautiful face and finish, and that, too, of California manufacture; thus practicing the duty we are constantly holding up to others—to support our own manufacturing and mechanical industries. While laboring faithfully and industriously in our chosen field, we owe our patrons and readers many thanks for the unmistakable evidences of appreciation with which they have received our efforts. For the future, we have only to say, that we shall continue, as in the past, our utmost endeavors to make the PRESS all that is desirable as a medium for the collection and dissemination of whatever can be made useful in advancing the mining, mechanical and general interests of the Pacific coast.

It will still, as heretofore, be our aim to stimulate all honorable enterprises; to raise a warning voice against all wild and reckless speculations; to record passing results; to marshal in appropriate order all the important discoveries and suggestions of the day, whence our readers may extract lessons of wisdom, whether in the paths of science or of industry. It is thus, that with growing years we hope to make our journal a faithful record of all that is useful or instructive, and so connect it with passing time, that it will, in the future, be found such an indispensable book of reference, that it will be sought for in every library which lays any claim to extent or completeness.

With this in view, we would again urge upon our readers the importance of filing their papers. We have now commenced a new volume, and a proper opportunity is presented to those who have heretofore neglected this duty, to commence it at once. Every reader of the MINING AND SCIENTIFIC PRESS should put the sheet regularly on file, where it may always be had for reference when wanted. In after years it will be worth and will command much more than its first cost.

The beginning of a new volume also presents a good opportunity for commencing a subscription. Our present issue will find its way to many new readers. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the

attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

## RITTINGER'S FUNNEL OR POINTED BOXES.

In our last issue, we spoke of these boxes as about being introduced for the separation of sands at the Eureka mill, Grass Valley. They have been employed for many years both in England and on the Continent of Europe, where they appear to give much satisfaction. They are used to separate or assort the sand into sizes, as a preparatory measure for concentration by other machinery. The great lack of success in concentration on this coast has arisen from the attempt to concentrate direct from the batteries, without a previous assortment into sizes—a thing impossible of successful accomplishment, and one which is never attempted in Europe.

The use of Rittinger's boxes, for this purpose, at the Eureka mill, will be the first attempt of the kind, so far as we are aware, on the Pacific coast, and as their success will doubtless be looked for with much interest, we shall not fail to report the same. Although these boxes are exceedingly simple in construction, cheap, and work without any especial attention, it is exceedingly difficult to describe them so as to be intelligibly understood; yet we will undertake to condense a description of them from Kustel's forthcoming work—the "Gold and Silver Processes of California and Nevada," where the same are fully described and illustrated. They consist simply of a series of boxes, usually four in number, each box increasing in size, and of about the following proportions:

First box, 6 feet long, 22½ feet wide, 4 feet deep.  
Second box, 9 feet long, 5 feet wide, 6 feet deep.  
Third box, 12 feet long, 9 feet wide, 8 feet deep.  
Fourth box, 16 feet long, 15 feet wide, 10 feet deep.

The difference of the water level between the boxes should be about eighteen inches. The sands are run direct from the battery into the first box, from that to the second, and so on. The boxes, instead of being made with rectangular sides and bottom, are formed like an inverted pyramid, with the lowest part coming to a point. At this point is a small orifice, through which the discharge is effected, with a very little escape of water. The discharge is not direct; but is made through a short pipe six or eight inches long, and about an inch in diameter, which is bent upwards along one of the under sides of the box, for some six inches or more, according as it may be found necessary to properly counteract the pressure of water within the box. This arrangement is attached to each of the boxes.

The sands flowing from the battery into the first box, discharge therein all their coarse particles, while those of a size much smaller are held suspended in the current,

and carried forward to the next box, which is made larger as above described, and so on. The result of this mode of separation with crushing of ordinary fineness, as ascertained by careful experiment, is given as follows:

The first box gives 40 per cent; the second 22; the third 20, and the fourth 12 of the crushed ore; leaving 6 per cent. as the finest slum. A cubic foot of water coming from the first box has been found to contain sixteen pounds of sand; that from the second box 13¼ of very fine sand; from the third box sixteen pounds of slime; from the fourth box twelve pounds of exceedingly fine slime.

These different sizes should then be each treated for concentration of their valuable constituents (sulphurets, etc.) separately, on any ordinary percussion table, such as those now in use for this purpose in our mills. The sand from the first and second boxes is easily treated; that from the third and fourth is more difficult of treatment, and requires a large amount of water. The work, when done, however, is thoroughly effected.

If grinding pans are to be used for the sands so treated, they should be employed after concentration, and upon the sand alone, after the sulphurets have been removed for treatment by roasting.

It may not be out of place in this connection, to mention the results of several experiments made at the Eureka mill, with the view of determining the relative advantages between working sulphurets by the chlorination process and by pans. The sulphurets from this mine assay very uniformly. From a lot which yielded by assay \$460 per ton, the maximum yield, without roasting, by the most careful pan process, aided to some extent by chemicals, was \$366—about 80 per cent. Sulphurets from the same pile, after being roasted, yielded but \$240; showing that for pan working, a better yield can be obtained from raw sulphurets than from those which have been roasted. The unroasted sulphurets were worked eighteen hours in the pan; we are not able to say how much time was occupied in working the roasted sulphurets.

Sulphurets from the same lot worked by Mr. Maltman, by chlorination process, yielded 90 per cent. Mr. Deetken by improved apparatus, expects to work them up to 95 per cent. His work, at Meadow Lake, has even exceeded that. The present charge for working sulphurets, by chlorination process, at regular sulphuret works, is \$40 per ton—the sulphurets delivered at the works. Mr. Deetken expects by his improved facilities, as described in our last issue, to work them for about \$6 per ton. If he succeeds in obtaining 95 per cent. of the gold for even \$12, he will have made a most important advance in this intricate branch of metallurgy. The ore from this mine yields about \$60 per ton in free gold, and \$5 per ton in sulphurets.

"ELECTRO-SILICON; OR MAGIO-BRILLIANT," is the designation applied to a new polishing powder, recently introduced to the public by Messrs. Frink & Edgar, at 212 Fourth street, in this city. This polishing powder is a natural mineral, "direct from nature's laboratory," as prepared by her handicraft in some portion of our neighboring State of Nevada. For gold and silver plate, Britannia, tin and any other kind of metal, whose brilliant luster is desirable, without any wear of the surface, this polish appears most admirably well calculated. It seems to form a kind of chemical union with the oxyds of the metals to which it is applied, thereby removing the tarnish without any apparent wear of the metal itself. The mineral constituents of the substance have not yet been determined, but measures have been taken to have a careful analysis made of it, which it is supposed may lead to new applications of this curious substance.

COMMUNICATIONS RECEIVED.—"Mines of Central Nevada," by J. D. Emersley; "Light for the Mines," by J. Mosheimer.



LIST OF OFFICERS OF CORPORATIONS  
AND MINING COMPANIES.

(PUBLISHED IN THE FIRST ISSUE OF EACH MONTH.)

[Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona-fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.]

**DEL NORTE COMSTOCK M. Co.**—Dec. 3. Trustees: I. Bluxome, Wm. J. Bailey, C. Storm, Daniel Froese, R. N. Van Brunt. President, R. N. Van Brunt; Secretary, Charles F. Schulze; Treasurer, John Sime; Superintendent, Wm. H. Woodbury.

**JEFFERSON G. & S. M. Co.**—December 12. Trustees: Henry Videau, Andrew J. Snyder, Henry J. Booth. President, Henry Videau; Secretary, C. V. D. Hubbard; Treasurer, Andrew J. Snyder; Superintendent, Wm. P. Jones.

**NACASSARI G. S. & C. M. Co.**—January 2. Trustees: H. D. Bacon, C. J. Brenham, George Platt, Levi Stevens, E. F. Clark, Edward Heighton, T. B. Bigelow. President, H. D. Bacon; Secretary, T. B. Bigelow; Treasurer, John Sime.

**OPHIR S. M. Co.**—December 19. Trustees: Edward Martin, Wm. H. Osgood, John C. Clark, Wm. B. Johnston, Jesse Holladay, L. W. Coe, George Platt. President, Ewd. Martin; Vice President, Wm. H. Osgood; Secretary, Robert George; Treasurer, Wm. C. Ralston; Superintendent, P. J. Buckminster.

**PEACOCK C. N. & C. M. Co.**—Nov. 12. Trustees: B. B. Redding, R. C. Gaskill, A. J. Snyder, Jno. F. Miller, Geo. C. Gorham. President, Gen. Jno. F. Miller; Secretary, C. V. D. Hubbard; Treasurer, A. J. Snyder; Superintendent, R. C. Gaskill.

## RECENT INCORPORATIONS.

**MISSION WOOLEN MILLS.**—Capital stock, \$500,000; 100 shares; \$5,000 per share. Trustees, Donald McLennan Alex. Weill, David Cahn.

**PACIFIC O. & L. WORKS.**—Capital stock, \$600,000; 6,000 shares; \$100 each. Trustees: J. Bensley, L. B. Benchley, B. P. Brunner.

**SAN FRANCISCO PHOTOGRAPHIC ARTISTS' ASSOCIATION.**—Capital Stock, \$25,000; 100 shares; \$250 per share. Trustees: Wm. Dickman, D. H. Woods, J. C. Chalmers.

**TANCOB B. G. Co.**—Table Mountain Mining District, Butte county, Cal. Capital stock \$500,000; 5,000 shares; \$100 per share. Trustees: H. Caselli, Jos. W. Winans, O. P. Sutton. December 1.

**SPECIMEN HUNTING** is now all the rage in Grass Valley. The rain-wash has exposed several of considerable size, the largest of which reported is two pounds nine ounces. Another weighed thirteen ounces.

**SPECIMENS FROM BOISE CITY.**—We have received a box of specimens from Mr. H. W. O. Margary, of Boise City, I. T., which will be duly noticed in our next.

## City Amusements.

**METROPOLITAN.**—"Mazlum; or, The Night Owl," has been put on in fine style by the Martinetti troupe, and the crowded houses show that their efforts are appreciated by the public. The pantomime, together with the ballet and introductory performance by the Howsons and Edouin, form an entertainment which should satisfy every one.

**OPERA HOUSE.**—"Arrah-na-Pogue" has been revived here during the past week with good success. Although it had a long run the first time, it seems to be a favorite still, and finds many who do not tire of seeing it more than once. Next Wednesday is announced as Lady Don's last appearance and benefit night.

**ACADEMY OF MUSIC.**—We are promised a short season here by Blaise's Japanese troupe, commencing on Monday night.

**WOODWARD'S GARDEN.**—New attractions are being constantly added to the fine collection here, making it a favorite place of resort to those who wish to pass an hour or two pleasantly.

**PACIFIC HYGIEN HOME WATER CURE,** at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygien Home Association (Incorporated), B. J. Smith, M. D., Consulting Physician; R. S. MacArthur, M. D., Attending Physician; W. G. W. Harbison, Manager; H. Anderson, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-14

**OLNEY & Co.,** Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. no10

**Air Pump for Sale.**—One of Tuto's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN ROACH, mathematical instrument maker, 522 Montgomery street. 2v13-9p

## To Owners of Mineral Cabinets.

A miner in Nevada has a lot of choice Crystals, which he desires to dispose of at reasonable rates to parties who may desire to complete their display of minerals. Address the office of the "Mining and Scientific Press." 16v13-17c



## Boiler Makers and Sheet Iron Workers.

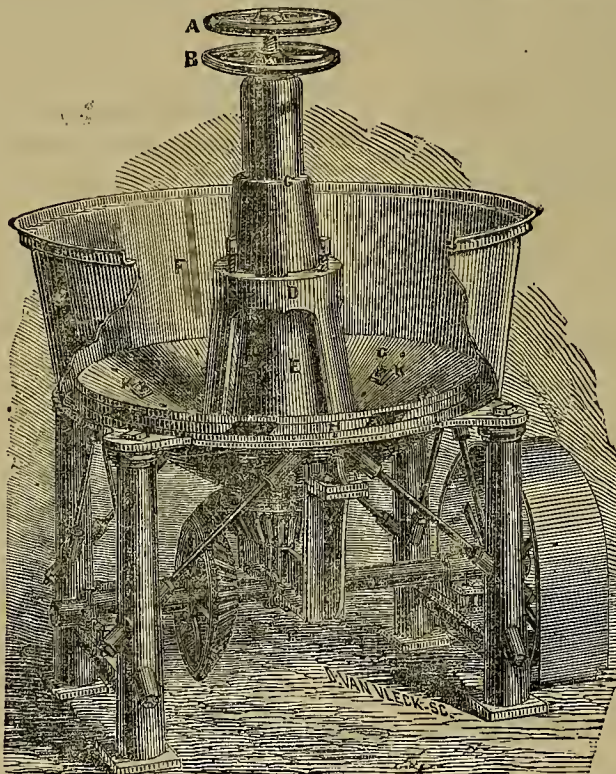
Mission Street, between Beale and Fremont, San Francisco.

N. B.—All kinds of Boiler and Sheet Iron Work executed at the shortest notice, and on the most reasonable terms. 17v12-14p1f

MOYNIHAN &amp; AITKEN.

## HEPBURN &amp; PETERSON'S PANS AND SEPARATORS.

For Reducing and Amalgamating Gold and Silver Ores.



We invite the Mining Public to examine the record of our Machines before adopting any other for producing similar results. They have been in general use for the past three years, during which time they have been repeatedly tried in comparison with every other machine of note, and of a similar nature, and have invariably been adopted in preference; which facts we offer as the most suitable recommendation, and which is attested by the following list of

## Principal Mills Using them:

Names of Companies.	Location of Mill.	Names of Companies.	Location of Mill.
GOULD & CURRY.....	Virginia City, Nevada.	TEARLE, ROGERS & CO.....	Silver City, Nevada.
SILVER STATE REDUCTION WKS. Empire City,		MELVILLE KELSEY.....	" "
OPHIR.....	Washoe City, "	HUGGIN & FORMAN.....	" "
EDWARD McLEAN.....	Silver City, "	YELLOW JACKET.....	Empire City, "
SANTIAGO & HUSTED.....	Zenith Flat, "	BELDEN & GREGORY.....	Esmeralda, "
FRENCH & KESLER.....	Dayton, "	HECKENDORY.....	Calaveras Co., "
HERMAN, KETSCHER & CO.....	Carson River, "	CARSON CREEK.....	" "
A. SUTRO.....	Dayton, "	CROWN LEAD.....	Mariposa Co., "
DAVIS & BARRON.....	Carson City, "	BIG BLUE LEAD.....	Yuba Co., "
PHOENIX.....	Silver City, "	E. T. STEEN.....	Amador Co., "
CHAR. S. GOUVEAU.....	Silver City, "	EAGLE.....	Yuba River, "
PIONEER.....	Silver City, "	THE MILL.....	Sierra Nevada, "
L. A. BOOTHIE & CO.....	Virginia City, "	SANTA CLARA.....	" "
A. DELAND.....	Washoe, "	ROSAARD & CARMAN.....	" "
SILVER MILL & MINING CO.....	Gold Hill, "	LIBERTAD.....	" "
RODGERS & CHESMAN.....	Silver City, "	DON JUAN ROBINSON.....	Sierra Nevada, "
ANDERSON & SEAL.....	Washoe, "		

Manufactured at the Principal Foundries in San Francisco.

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COAL OILS AND LAMP STOCK.

2v12-3mnp

**NITRO-GLYCERINE AGAIN.**—A man was killed at Rochester the other day, by the accidental explosion of fifteen pounds of this substance, which was being used for blasting purposes. Two others were fearfully injured.

## Consumption Cured.

FULTON, Hamilton Co., Ohio, May 19, 1883.—Gents: This is to certify that my daughter was taken with a severe cold, which settled upon her lungs, attended with violent coughing. The cough became incessant and distressing, with pain and great difficulty of breathing. It went on until she could not sleep, and she was unable to get up. She was almost gone, and that they believed she could not be cured, as she had the last stages of consumption. At this time she was induced to try ALLEN'S LUNG BALM, having heard of its many remarkable cures. On using the Balm, it seemed to go to the very seat of the disease at once, as it caused her to expectorate large quantities of phlegm and mucus. The attending physicians examined her, and said that they thought one of her lungs was almost gone, and that they believed she could not be cured, as she had the last stages of consumption. At this time she was induced to try ALLEN'S LUNG BALM, having heard of its many remarkable cures. On using the Balm, it seemed to go to the very seat of the disease at once, as it caused her to expectorate large quantities of phlegm and mucus. The attending physicians examined her, and said that they thought one of her lungs was almost gone, and that they believed she could not be cured, as she had the last stages of consumption. By the use of only three bottles, she, to all appearances, had recovered her health, and now feels as well as ever. Respectfully, yours, LUCIUS PICKER.

Sole by all Medicine Dealers everywhere. 1v14-1m

## WANTED!

A PARTNER OR PURCHASER

—FOR A—

Valuable Mining Invention,

MEETING A GENERAL WANT.

Apply to the PATENT DEPARTMENT  
of Mining and Scientific Press,  
1v14 505 Clay street, San Francisco.

## GREGORY YALE,

Attorney and Counsellor at Law,

No. 18 Merchants' Exchange,

(Battery and Washington streets).

Special attention given to obtaining Patents for Mining Lodes under the Act of Congress of July 20th, 1866; and Claims filed before the U. S. Registers and Receivers in any of the Land Districts in the State, and Contests before the Courts, under the Law, attended to. Opinions prepared upon all questions relating to Mining Laws. 1v14-1m

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m

JAMES HITCHENS.



## A. S. Hallidie &amp; Co.,

MANUFACTURERS OF

FLAT &amp; ROUND WIRE ROPE.

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach.

**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to any of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

**Round Wire Rope**—Iron or Steel, for Hoisting.

**Flat Wire Rope**—" "

**Soft Steel Wire Rope**—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

**Galvanized or Ungalvanized Round Wire Rope**—For Slips, Bights, Derrick guys, Ferry Ropes, and all standing purposes.

**Steel Ferry Ropes**—For wide streams. Ferry Blocks supplied.

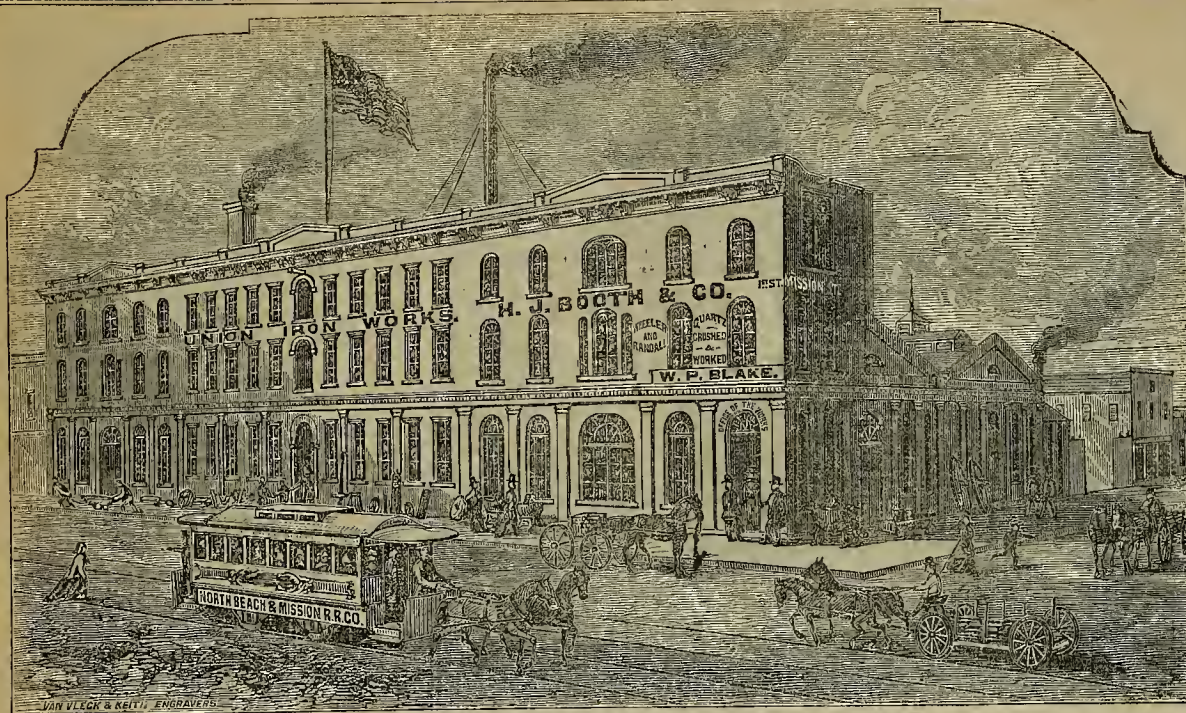
**Iron and Copper Wire Cord**—3/4 to 1 1/2 inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on band.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. Wt. 100 ft.	Cir. Wt. 100 ft.	Cir. Wt. 100 ft.	Size Link 100 ft.	Brk'g Wt. 100 ft.
lbs.	lbs.	lbs.	lbs.	tons.
2 53	1 1/2 33	5 109	3/4 265	7 2,300
2 83	2 65	6 120	3/4 341	11 3,700
3 1/2 170	2 1/2 91	8 236	3/4 533	19 6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 2v13-5mnp





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rice, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, Flue, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Frater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.

H. J. BOOTH & CO.

## Machinists and Foundries.

**PALMER, KNOX & CO.,**  
Golden State Iron Works,  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
STEAM ENGINES AND QUARTZ MILLS  
DUNBAR'S IMPROVED  
Self-Adjusting Piston Packing.

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
NEW GRINDER AND AMALGAMATOR  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
Tyler's Improved Water Wheel,  
Giving the greatest power, at lower cost than any  
Wheel in use. There are over 1,500 running,  
giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz  
mining, and being conversant with all the improvements,  
either in Mining or Milling, we are prepared to furnish, at  
the shortest notice, the most perfect machinery for reducing  
ores, or saving either gold or silver. 18v19y-47

**WILLAMETTE IRON WORKS,**  
PORTLAND, OREGON.

Steam Engines, Boilers,  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER  
WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
Sacramento.

**WILLIAMS, ROOT & NEILSON,**  
MANUFACTURERS OF  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired  
with neatness, durability and dispatch.  
Dunbar's Patent Self-Adjusting Steam Piston  
PACKING, for new and old cylinders, manufactured  
to order.

Front Street, between N and O streets,  
18v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
Pick Manufacturer,  
No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for  
Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE  
QUARTZ PICK, which is especially adapted to Quartz Min-  
ing, and guaranteed to give good satisfaction. 18v13y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
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**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,

—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND  
REPAIRED.  
Special attention paid to Repairing. 18v13y-3

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**PACIFIC FILE FACTORY.**

No. 53 Beale Street,  
Between Market and Mission streets, San Francisco.

FILES REBUT AND WARRANTED AS GOOD AS NEW,  
or no charge. The only establishment in the State.  
We also manufacture Reapers and Mower Sections.  
8v13-ly **DURNING & FISHER, Props'rs.**

**LEWIS COFFEY & RISPON,**  
Steam Boiler & Sheet Iron Works.

THE only exclusively Boiler Making establishment on the  
Pacific Coast owned and conducted by Practical Boiler  
Makers. All orders for New Work and the repairing of Old  
Work, executed as ordered, and warranted as to quality.  
Old Stand, corner of Bush and Market streets, opposite  
Oriental Hotel, San Francisco.

**GLOBE**  
Foundry and Machine Shop,

STOCKTON, CAL.

**KEEP, BLAKE & CO.,**

MANUFACTURERS OF  
Quartz, Saw and Crist Mill Irons, Steam  
Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons,  
House Fronts, Iron Fencing, Balcony Railings, etc.,  
at San Francisco prices. Orders solicited  
18v13-ly and promptly executed.

**Pacific Forge Company.**

**FORGING AND IRON WORK.**

THE PACIFIC FORGE COMPANY HAVE JUST ERECTED  
ed in this city, on Fourth street, near the machine  
shop of the San Jose Railroad, a large establishment for the  
purpose of forging and working in wrought iron. Our ham-  
mer is the largest upon this coast, and we are prepared to  
manufacture, at short notice, all kinds of heavy forges,  
car axles, shafts, steamboat cranks, piston-rods, wagon  
axles, and other similar work. This is the first general  
shop of the kind erected in this State, and we solicit the  
patronage of the public. All orders executed at reasonable  
rates, and with promptness and satisfaction. 18v12-3m

F. N. BACON. LEMAS STEWART.  
**BACON & STEWART,**  
**PRACTICAL MACHINISTS,**  
No. 51 Beale street, San Francisco.

All kinds of Machinery made and Repaired.  
Particular attention paid to PRINTING PRESS work.  
All jobs entrusted to us will be attended to with prompt-  
ness and on reasonable terms. The patronage of Printers is  
respectfully solicited. 18v13-ly

J. O. HANSCOM. HANS COM & CO., T. PENDERGAST.  
H. S. SMITH. W. W. HANSCOM.

**Etna Iron Works!**

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

Practical Machinists and Iron Founders,  
MANUFACTURE

**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Re-  
quires no springs or screws; is always steam-tight; without  
excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
Wheeler & Randall's New Grinder and  
Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power, at lower cost, than any wheel in use

Send for one of our circulars, giving full tables

All Wheels warranted to give the power as set forth, or  
the money will be refunded

**Sole makers for this coast of the "Pendergast**  
White Iron Stamp Shoes and Dies.

None genuine unless obtained from us. Every one war-  
ranted.

Patented Machinery of all kinds will be furnished by us  
at market prices. Particular attention given to drawings  
and specifications of machinery, which will be made to  
order. The patronage of the public is respectfully solicited.  
18v12

**FULTON**  
Foundry and Iron Works.

**HINCKLEY & CO.,**

MANUFACTURERS OF

**STEAM ENGINES,**

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's  
Improved Crusher, Mining Pumps,  
Amalgamators, and all kinds  
of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mis-  
sion street, San Francisco. 18v11

**NEPTUNE IRON WORKS,**

Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

**MARINE,**  
Locomotive,

And all kinds of  
**HIGH PRESSURE**  
Steam Boilers

MADE.

All Boilers guaranteed and  
tested by U. S. Boiler In-  
spector before sent out of  
the Shop, at Shop expense.

All kinds of Sheet Iron and  
Water Pipe, Coal Oil  
Stills, Wrought Iron  
Worms, etc., etc.  
Manufactured to Order.

Old Boilers Repaired  
**B. CAMERON.**

6v12-ly

**RIGHTS OF FOREIGNERS HOLDING FRENCH**  
PATENTS.—Commissioner Gen. Beckwith,  
in a letter to the Secretary of State, dated  
November 7th, says he addressed an inquiry  
to the Imperial Commission some time  
since concerning the legal right of foreign-  
ers holding French patents for their inven-  
tions, to exhibit and afterward sell the  
foreign made products thus patented in  
France, without forfeiture of the French  
patent. The Imperial Commission referred  
the inquiry to the Ministers of Commerce,  
and were informed that, in the opinion of  
the government, such exhibitions and sale,  
if duly authorized by the Minister of Com-  
merce, would not operate a forfeiture of  
patent, but that the decision of questions  
touching such forfeiture belonged to the  
courts of law. Mr. Beckwith inclosed  
copies of the correspondence, copies of  
which he had sent to Mr. Derby, at New  
York, for the information of patentees whom  
it may concern.

**WE ARE NOW OFFERING**  
**OUR IMMENSE STOCK**  
—OF—  
**Fine Custom Made Clothing**

—AND—  
**Gents' Furnishing Goods**

**AT PRICES THAT DEFY COMPETITION.**

Our Stock of Clothing Consists of

**ALL THE LATEST STYLES**

BOTH IN MATERIAL AND FINISH.

A Large Assortment of

Trunks, Valises, Carpet Bags, Blankets, Etc.,

AT EXTREMELY LOW PRICES.

**J. R. MEAD & CO.,**

8v10 Cor. of Washington and Sansome streets.

**CALIFORNIA BRASS FOUNDRY.**

No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbit Metal  
Castings, Brass Ship Work of all kinds, Spikes, Sheathing  
Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and  
Gongs of superior tone. All kinds of Cocks and Valves, Hy-  
draulic Pipes and Nozzles, and Hose Couplings and Con-  
nections of all sizes and patterns, furnished with dispatch.  
18v13-ly PRICES MODERATE. J. H. WEED.

V. KINGWELL. 18v13-ly J. H. WEED.

**SAN FRANCISCO**

**Foundry and Machine Works,**

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

**Marine and Stationary Engines**

Quartz Machinery, Saw, Flour and Sugar Mills, Mining  
Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**

Of all sizes, constantly on hand; Quartz Mill Shoes and  
Dies warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston  
Packing, requires no springs or screws; is always steam-  
tight; without excessive friction, and never gets slack or  
leaky.

**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at  
the lowest market rates.

6v11-ly **DEVORE, DINSMORE & CO**

**JAMES MACKEN,**  
**COPPERSMITH,**

No. 226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best  
manner. Particular attention paid to Steamboat, Sugar  
House and Distillery work.

Repairing promptly and neatly attended to,  
18v11

**JOHN LOCHHEAD'S**

**Steam Engine Works,**

Beale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**

PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland  
navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San  
Francisco for the last fourteen years, and enjoys the re-  
putation of having built ONE HUNDRED AND SEVENTEEN  
STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery  
generally, made to order, and warranted to give perfect  
satisfaction in every particular. 25v12-3m

Owing to its general circulation, the MINING AND SCIENTIFIC  
PRESS has perhaps been as valuable and useful to the  
mining interests as that noted paper, the "London & Lan-  
cet," was to the medical profession, acting either as a  
scourge when too great a plethora of mining bubbles pro-  
vailed, or as a styptic where dangerous bleeding of the  
pockets of the capitalists was concerned.—[Copperopolis  
Courier, Oct. 13



**AUSTRALIAN GOLD AT THE PARIS EXHIBITION.**—It is intended to forward to the Paris Exhibition a pyramid, representing the space which would be occupied by all the gold produced in Victoria during the last fifteen years. The height of the pyramid will be fifty feet ten inches, and at the base it will measure ten feet square. Its cubic measure will be 1,994 feet, and it will represent a weight of 1,071 tons 3 qrs. 12 lbs., of the value of \$700,000,000. Why cannot California get up a similar exhibition of her auriferous production. A gilt pyramidal representation of the gold and silver product of the Pacific coast, would be something worth looking at.

## BELLAMBI COAL!

A SUPERIOR ARTICLE OF  
**SMITHS' COAL,**

FOR SALE IN QUANTITIES TO SUIT,  
At Greatly Reduced Rates.

Sacked to order for Shipment to the Country.

Apply to

**FLINT, PEABODY & CO.,**

184 Montgomery 408 CALIFORNIA STREET, San Francisco.

## Bell's Assay Office.

THE UNDERSIGNED, HAVING FORMED A PARTNERSHIP this day, would inform the former patrons and the public generally, that they will continue the ASSAY BUSINESS in all of its branches, at the old stand,

No. 512 California street,

One door west of Montgomery, San Francisco, with the same employees, under the name of Rogers & Brown. Mr. EDWARD WOLFE, for the last seven years Assayer for Mr. Bell, will have charge of the Assay Department.

The Melting Department will be under the charge of Mr. HENRY J. FISHER, for ten years in the United States Mint in this city and Philadelphia, and for the past seven years with Mr. Bell.

We would inform Photographers that we are prepared to work their chlorides of silver and ashes from their paper clippings.

We have, in connection with our Assay business a Mill, and are prepared to

**WORK GOLD AND SILVER ORES,**  
in quantities from 25 to 500 pounds; also, Assayers' Sweeps.  
**GEORGE E. ROGERS,**  
**H. W. BROWN,**  
October 13, 1866.

## QUINCY HALL

### CLOTHING EMPORIUM!

515, 517 and 519 Washington street,  
(Near Montgomery),  
SAN FRANCISCO.

For a Dress Suit,  
A Business Suit, or  
A Working Suit,  
GO TO QUINCY HALL!

For Shirts, Collars, Drawers, Undershirts, Socks,  
Ties, Gloves, or any other FURNISHING GOODS,  
GO TO QUINCY HALL!

For Hats, Caps, Trunks, Valises and Carpet Bags,  
JUST GO TO QUINCY HALL!

If you want a SUIT MADE TO ORDER, of Foreign or  
Domestic Cloth,

ALWAYS GO TO QUINCY HALL!

IT IS THE LARGEST AND CHEAPEST CLOTHING  
HOUSE IN SAN FRANCISCO.

All Goods Warranted as Represented

## QUINCY HALL,

No. 515, 517 and 519 Washington street,  
19v13-3m Next to Montgomery.

## HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

—OF—  
**Illuminating, Lubricating,  
PAINT OILS!**

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
TANNERS', NEATFOOT, BOILED AND RAW  
LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

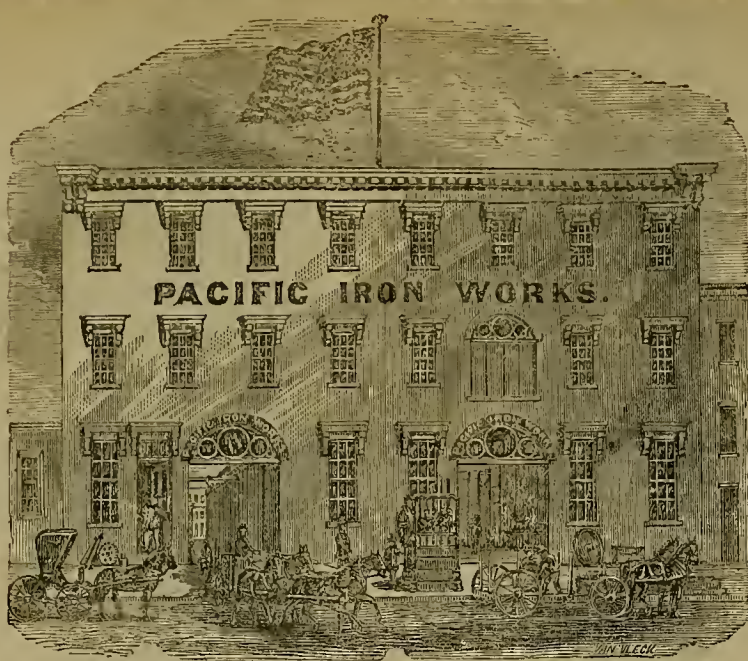
**SPIRITS OF TURPENTINE & ALCOHOL**

NOTE.—We would specially call the attention of Mill  
owners and Engineers to our superior PARAFFINE OIL,  
which we manufacture from the California Petroleum.  
This Oil will not gum. Machinery thoroughly cleaned and  
lubricated with it will not heat, and after remaining at rest,  
can be started without cleaning off.

A sample can of our Paraffine Oil will be forwarded  
on application to us, as we desire a fair and impartial trial.

## Lamps and Lamp Stock!

An elegant and complete assortment on hand.—  
v13-3m19 414 Front street, San Francisco.



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

**GODDARD & COMPANY.**

## DR. O. DUNNING,

Respectfully informs the public that he treats ALL DIS-  
EASES the human system is afflicted with, and  
can be found at his office,

Rooms Nos. 13 and 14 Government House  
Corner Washington and Sanson streets,  
18v13-6m SAN FRANCISCO, CAL.

## NATIONAL

### Insurance Company!

OF SAN FRANCISCO.

Office, No. 405 Montgomery street,  
(Near California).

**MARINE INSURANCE**—Upon Hulls, Cargoes,  
Treasure, Commissions, Profits, and other subjects of  
Marine Insurance, to and from all Ports in the world,  
including Inland Risks.

**FIRE INSURANCE**—Upon Buildings, Merchandise,  
Furniture, Rents, Vessels in Port and their Cargoes,  
and other Insurable Property.

Capital (Paid up) --- \$1,000,000.

Losses promptly adjusted and paid in United  
States Gold Coin.

**WILLIAM PIERCE,** President. **D. W. C. THOMPSON,** Vice-President.  
**W. W. WIGGINS,** Secretary. **A. NOYES,** Marine Officer.  
EXECUTIVE COMMITTEE:  
**Albert Dibblee,** Chairman. **Joseph A. Donahue,**  
**R. G. Sneath,** **John G. Bray,**  
**Abram Black.** 2v13-4m

## Pacific Law and Collection Office

—OF—

## W. H. ALLEN,

Attorney and Counsellor at Law,  
Principal Office at Rooms 11, 12 and 13 Amory Hall  
Building.

502 Montgomery Street, San Francisco, Cal.

Agencies at every City and Town on the Pacific Coast.  
Collections guaranteed with or without suit in all the cities  
and counties of the Pacific and Atlantic Coasts.

Legal advice will be given free of charge until after  
1st January, 1867. Postage on letters asking advice must be  
paid both ways. 8v13-3m

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

### PRICES REDUCED!

These arms have been  
preferred by the United  
States Government, and  
stand unequalled by any  
in the world. Revolvers,  
Army, Navy, Belt and  
Pocket, Double and Sin-  
gle Action; Repeaters,  
and vest-pocket Pistols,  
with copper ammunition.  
Police Revolvers, a new  
model, navy size ball, .32  
to 6 inch barrel; Rifle  
Guns—an entirely new  
most perfect Gun. All the new models for sale very  
low. 12v13m

**ALBERT E. CRANE.**

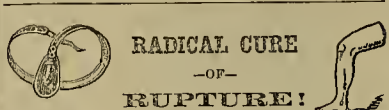
## ROWLAND, WALKER & CO.,

### GROCERS,

Nos. 516 and 518 Washington street,

Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits.  
22v13-1y



## RADICAL CURE

—OF—

## RUPTURE!

Treatment of all Deformities of the Body, by DR. A.  
POLLEAU'S process. 621 Washington street, up stairs,  
Washington Bait Building, between Montgomery and  
Kearny streets.

## DR. A. FOLLEAU

Has his studies and manufactories in the same building.  
Every kind of Apparatus, Frusses, Orthopedic Instru-  
ments, Artificial Limbs, etc., are manufactured and applied  
by himself. 8v13-1y1p

## Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
study and successful experience in working ores in Washoe,  
and is practiced in saving sulphurets and the treatment of  
refractory ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz operator. Address **P. M. SHAW,**  
San Francisco, care Mining and Scientific Press. 14v13-1m

## CONNECTICUT

### Mutual Life Insurance Co.

The Largest Life Insurance Com-  
pany in the World.

ASSETS.....\$12,000,000.

## THE CONNECTICUT MUTUAL

IS NOW THE LARGEST AND MOST PROMINENT LIFE  
Insurance Company in the world, and it has

The Largest Number of Members,  
The Largest Amount Insured,  
The Largest Surplus,  
The Largest Business,  
The Largest Income,

And as it obtains the LARGEST average rate of interest on  
its investments, and has had, through its whole history,  
the SMALLEST average expenses, it therefore affords in-  
surance at LESS COST than any other Company.

The surplus premium (dividend) returned to Policy  
Holders during the current year is SIXTY PER CENT. of the  
premiums paid during the year ending 31st of January,  
1865.

Insurance can be effected in this Company in all the  
forms desired, and to meet all the contingencies to which  
Life Insurance is applicable, among which forms are—

**Whole Life Policies,** by a continued annual life  
premium.

**Whole Life Policies,** by TEN annual premiums.  
**Endowment Policies,** by a continued annual  
premium.

**Endowment Policies,** by a limited annual pre-  
mium, for FIVE, TEN, FIFTEEN or TWENTY years.

**Endowment Policies,** made payable at any age  
stipulated.

ALL POLICIES issued by this Company are either non-  
forfeitable by their terms, or may be converted into those  
which are so, at the option of the insured.

This Company offers all the advantages of a CASH or  
NOTE Company. The assured are not required to give a  
note in part payment of the premium, but may, if prefer-  
red, pay the first four premiums in cash after which their  
dividends on Annual Premium Life, and Continued Pre-  
mium Endowment Policies, will, in the past success of the  
Company is continued, reduce their premiums ONE HALF.  
When notes are given for Annual Life and Continued En-  
dowment Premiums, no notes will be required after the  
fourth payment, and the returned surplus—dividends—  
will be applied as cash to the reduction of the annual  
premium.

None but Unexceptional Risks Accepted; and  
only upon ages between Fourteen and Sixty.

## DIRECTORS:

**JAMES GOODWIN,** **HENRY C. ROBINSON,**  
**GEORGE S. GILMAN,** **GUY R. PHELPS,**  
**MARCUS F. HOLMES,** **E. D. TIFFANY,**  
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**GUY R. PHELPS, President.**

**Z. PRESTON, Vice-President.**

**W. S. OLMSTEAD, Secretary.**

**O. W. POWERS, Actuary.**

## A. D. SMITH & CO.,

General Agents Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets,  
San Francisco. 17v13-1p11

## Accidental Insurance!

### The Accidental Insurance Company OF NEW YORK,

ISSUES POLICIES INSURING AGAINST INJURIES OF  
all kinds, and death resulting from accident.  
In case death does not result from the injury, the insured  
receives a weekly compensation as long as he is disabled  
(not to exceed twenty-six weeks).

## ONE YEAR POLICIES.

\$5 will buy Policy for \$1,000, with weekly compensa-  
tion of \$5.  
\$10 will buy Policy for \$2,000, with weekly compensa-  
tion of \$10.  
\$50 will buy Policy for \$10,000, with weekly compensa-  
tion of \$50.

## SHORT TERM POLICIES.

Policies will also be issued for any other amounts within  
the limits before stated, for periods of one to six months,  
at rates in tenths of the Annual rate, as follows:

1 month,	2-10.	4 months,	5-10.
2 "	3-10.	5 "	6-10.
3 "	4-10.	6 "	7-10.

## GENERAL ACCIDENT TICKETS.

This Company also issues Tickets which are sold by  
many of its Agents at Hotels and Ticket Offices through-  
out the country.

They make Insurance for \$5,000, and \$25 per week com-  
pensation, against Accidents of every description, traveling  
or otherwise; good for one to six days, as required, at  
TWENTY-FIVE CENTS PER DAY.

They are not simply Travelers' Insurance Tickets which  
cover only injury or death, the result of an "Accident to  
the Public conveyance in which the assured may at the  
time be traveling," but they are GENERAL ACCIDENT  
TICKETS.

## SEA VOYAGE POLICIES

Are issued, covering the risks of travel to European and  
other Ports. Rates varying with the season, and the voy-  
age to be taken. Information can be had of the Company  
or its Agents.

The Company has a PAID UP CASH CAPITAL OF  
\$250,000. One hundred thousand dollars deposited with  
Wm. Barnes, Esq., Superintendent of the Insurance Depart-  
ment of the State of New York, and the remainder securely  
invested in Stocks in the hands of the Company.

## INDUCEMENTS!

The rates of Premium are very low.  
The Plan is so simple that any one can comprehend all  
its workings.

No MEDICAL EXAMINATION is required, and those who  
have been rejected by Life Companies, in consequence of  
hereditary or other diseases, can effect Insurance in this  
Company at a very small cost.

No better or more satisfactory use can be made of so  
small a sum.

For Policies or further information, apply to

## A. D. SMITH & CO.,

General Agents for the Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets,  
San Francisco. 17v13



**WAKING A MAN BY TELEGRAPH.**—The London telegraphic operator, whose business it is to send the reports by a special wire to a Glasgow morning journal, found the office closed the other night, and the porter asleep. He drummed frantically upon the said door until he got tired, without succeeding in awakening him. There was no one else in the building except the clerk in the operating room, at the top of the six story building. It would, of course, be useless to attempt to communicate with him. So he went to an adjoining telegraph station, and sent a message to the company's office in Glasgow, 400 miles distant, requesting the clerk there to telegraph the London clerk to "go down stairs and arouse the porter." This was done, and in about twenty minutes he succeeded in effecting an entrance.

At Solingen, in Germany, sword blades equal to the famed ones of Damascus are said to be made. A faggot is first formed of alternate fine bars of iron and steel. It is drawn out, doubled and twisted several times, and then formed into a ribbon. Two such ribbons are welded together, enclosing between them a thin blade of the best cutting English steel. After polishing, it is dipped in dilute sulphuric acid to give it a pattern.

The Canadian savants cannot determine whether the reported gold discoveries are genuine or not. There is some reason to suspect that the old California trick of "salting" has been practiced by interested parties. At any rate, the shaft which has been sunk is guarded with a degree of care which is somewhat suspicious.

## MINING AND SCIENTIFIC PRESS.

### Terms of Advertising and Subscription.

#### Miscellaneous Advertisements.

One week, per square..... \$1 50  
One month, per square..... 3 00  
One quarter (3 months), per square..... 7 50  
Advertisements of great length, or of special character, inserted by contract on the most favorable terms.  
The space of ten lines of solid type constitutes a square.

#### Mining Advertisements.

Notices of Meetings, per square, three weeks..... \$3 50  
Notices of Meetings, per square, four weeks..... 4 00  
Assessment Notices, of ordinary length, four weeks..... 7 00  
Assessment Notices, of more than usual length, four weeks, for each additional square..... 4 00  
Delinquent Sales, per square, two weeks..... 2 50  
Delinquent Sales, per square, three weeks..... 3 50  
Postponements, per square, one week..... 1 50  
Sale of Advertisements printed, for meetings, or assessments, per hundred..... 1 00  
Advertising law blanks, circulars, and advice..... Free

#### Terms of Subscription.

One copy, one year, by mail, in advance..... \$5 00  
One copy, six months, by mail, in advance..... 3 00  
One copy, one year, by express..... 6 50  
One copy, six months, by express..... 3 50  
Five copies, one year, by mail, in advance..... 20 00  
By city carriers, per month..... 60  
Single copies..... 15  
Monthly Series (or parts) one year, by mail..... 5 50  
Monthly Series, per monthly copy..... 65

THE CIRCULATION OF THE PRESS, already extensive, is rapidly increasing, and substantial tradesmen who can profit by widely disseminating information of their business amongst the most intelligent, influential and industrial classes of the Pacific States and Territories will find no more effective or economical medium for advertising.

**DEWEY & CO., Proprietors.**  
Patent Agency and Job Printing Office, 505 Clay street, San Francisco.  
(Lambs) July 1, 1866.

## Pacific Mail Steamship Co's THROUGH LINE TO NEW YORK, Carrying the United States Mail.

**LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M.** of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.

On the 10th, 19th and 30th of each month that has 31 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 12th or 19th connect with French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton, and P. R. Co.'s steamer for Central America.

The following Steamships will be dispatched on dates as given below:

January 10th—GOLDEN CITY.....Capt. Jas. T. Watkins, Connecting with HENRY CHANCEY, Capt. Maury.

January 19th—MONTANA.....Capt. Jos. Sutton, Connecting with the RISING STAR, Capt. Howes.

January 30th—CONSTITUTION.....Capt. J. M. Cavarly, Connecting with NEW YORK, Capt. Gray.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Inman Line, can be obtained at office P. M. S. Co., San Francisco.

For Merchandise and Freight apply to Messrs. WELLS, FARGO & CO.

The splendid steamship COLORADO will be dispatched on MONDAY, April 15, 1867, for HONGKONG, via Kanagawa, carrying passengers, mails and freight.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

## SALES OF THE WEEK

BY THE S. F. STOCK & EXCHANGE BOARD

### Saturday, December 29.

145 shs Overman at 19 1/2 per share.  
65 shs Overman at 21 1/2 per share.  
10 shs Overman at 19 per share, s 30.  
408 shs Ophir at 137 1/2 per foot.  
130 shs Ophir at 140 per foot, s 10.  
51 shs Chollar-Potosi at 205 1/2 per share.  
15 shs Chollar-Potosi at 200 per share s 30.  
15 shs Chollar-Potosi at 210 per share b 30.  
10 shs Chollar-Potosi at 208 1/2 per share b 10.  
6 shs Chollar-Potosi at 208 per share s 20.  
2 shs Chollar-Potosi at 203 per share s 10.  
3 shs Yellow Jacket at 1200 1/2 per ft s 30.  
6 shs Yellow Jacket at 1220 1/2 per ft s 10.  
1 sh Yellow Jacket at 1250 per foot b 10.  
6 shs Yellow Jacket at 1200 1/2 per foot.  
1 sh Yellow Jacket at 1238 per foot s 10.  
1 sh Yellow Jacket at 1240 per foot.  
5 shs Confidence at 63 per share.  
10 shs Confidence at 67 1/2 per share, s 30.  
50 shs Bullion at 30 per foot.  
50 shs Bullion at 23 per foot.  
17 shs Bullion at 29 per share.  
18 shs Bullion at 28 per share.  
15 shs Bullion at 30 per foot b 30.  
10 shs Bullion at 23 per foot, s 30.  
1 sh Belcher at 132 1/2 per foot.  
\$10,000 Legal Tender Notes at 75c.  
\$350 Legal Tender Notes at 75c.  
Amount of sales.....\$ 55,502 00

### Monday, December 31.

12 shs Gould & Curry at 620 per foot.  
12 shs Gould & Curry at 625 per foot.  
4 shs Gould & Curry at 620 per foot.  
4 shs Ophir at 150 per foot, b 30.  
42 shs Ophir at 145 per foot.  
42 shs Ophir at 147 per foot.  
17 shs Overman at 23 1/2 per share.  
18 shs Overman at 26 per share.  
56 shs Overman at 26 per share.  
59 shs Overman at 21 per share.  
20 shs Overman at 21 per share, s 30.  
6 shs Overman at 22 per share b 10.  
8 shs Chollar-Potosi at 208 per foot.  
8 shs Chollar-Potosi at 207 per foot.  
5 shs Chollar-Potosi at 205 per foot, s 30.  
4 shs Chollar-Potosi at 211 per ft b 30.  
10 shs Chollar-Potosi at 209 per foot.  
12 shs Yellow Jacket at 1240 per foot.  
12 shs Yellow Jacket at 1200 per foot.  
1 sh Yellow Jacket at 1315 per foot b 30.  
10 shs Yellow Jacket at 1300 per foot b 15.  
2 shs Yellow Jacket at 1290 per foot.  
69 shs Bullion at 35 per share.  
69 shs Bullion at 33 1/2 per share.  
10 shs Bullion at 29 per share b 5.  
10 shs Bullion at 35 per share b 30.  
15 shs Bullion at 30 per share.  
15 shs Bullion at 34 per share.  
15 shs Bullion at 34 per share, b 5.  
1 sh Empire M & M Co. at 200 per share.  
20 shs Pacific Insurance at 167 per share.  
6 shs Imperial at 123 per share.  
6 shs Imperial at 125 per share.  
6 shs Imperial at 130 per share, b 30.  
6 shs Imperial at 125 per share, s 30.  
5 shs Confidence at 76 per share.  
5 shs Confidence at 75 per share.  
1 sh Savage at 2150 per foot.  
10 shs Overman at 21 per share.  
10 shs Overman at 19 per share.  
20 shs Overman at 18 1/2 per share b 30.  
20 shs Overman at 20 per share b 30.  
7 shs Imperial at 125 per share.  
8 shs Imperial at 124 per share.  
10 shs Bullion at 35 per share, b 30.  
5 shs Bullion at 31 per share.  
6 shs Bullion at 22 per share.  
6 shs Bullion at 32 per share b 5.  
5 shs Bullion at 31 1/2 per share b 5.  
10 shs Bullion at 34 per share, b 30.  
6 shs Bullion at 31 per share, s 10.  
54 shs Ophir at 147 1/2 per foot.  
54 shs Ophir at 145 per foot.  
12 shs Ophir at 150 per foot, b 10.  
6 shs Pacific Ins Co at 167 1/2 per share.  
10 shs Spring Valley W W at 59 per sh.  
4 shs Chollar-Potosi at 210 per foot.  
4 shs Chollar-Potosi at 214 per foot.  
9 shs Yellow Jacket at 1310 per foot.  
10 shs Yellow Jacket at 1340 per foot.  
1 sh Yellow Jacket at 1335 per foot b 5.  
1 sh Yellow Jacket at 1335 per foot.  
2 shs Yellow Jacket at 1340 per foot b 15.  
1 sh Yellow Jacket at 1325 per foot.  
10 shs Confidence at 76 per share.  
5 shs Confidence at 82 1/2 per share b 30.  
1 sh Savage at 2100 per foot.  
1 sh Savage at 2160 per foot, s 30.  
\$1,000 U S 7-30 Bonds, June Is. at 73 1/2 c.  
Amount of sales.....\$135,333 75

### Wednesday January 2.

36 shs Ophir at 150 per foot.  
12 shs Ophir at 150 per foot, b 10.  
15 shs Overman at 18 1/2 per share.  
10 shs Overman at 18 per foot.  
5 shs Overman at 18 per share b 10.  
5 shs Cal. Steam Nav. Co. at 64 pr et b 3  
5 shs Belcher at 132 per foot.  
20 shs Confidence at 78 per share.  
15 shs Confidence at 80 per share.  
2 shs Confidence at 81 per share.  
15 shs Sierra Nevada at 3 per share.  
5 shs San Francisco Gas Co. at 64 1/2 p sh.  
4 shs Chollar-Potosi at 210 pr foot.  
20 shs Bullion at 28 1/2 per share.  
5 shs Bullion, at 27 1/2 per share, s 10.  
5 shs Bullion at 26 per share s 30.  
16 shs Bullion at 27 1/2 per share.  
75 shs Spring Valley Water Co at 56 1/2 p et.  
15 shs Yellow Jacket at 1320 per foot.  
8 shs Yellow Jacket at 1325 per foot.  
10 shs Yellow Jacket at 1360 per foot, b 30.  
1 sh Yellow Jacket at 1335 per foot b 5.  
1 sh Yellow Jacket at 1320 pr ft s 30.  
1 sh Yellow Jacket at 1325 per foot s 30.  
\$750 Legal Tender Notes at 74 1/2 c.  
\$14,000 Legal Tender Notes at 72 1/2 c.  
\$5,000 Sacramento City Bonds at 19 p et.

### AFTERNOON SESSION.

12 shs Ophir at 154 per foot.  
2 shs Savage at 2200 per foot.  
1 sh Savage at 2200 per foot, b 5.  
50 shs Crockett at 75c per share b 30.  
4 shs Yellow Jacket at 1400 per foot b 30.  
4 shs Yellow Jacket at 1420 per foot, b 30.  
2 shs Yellow Jacket at 1345 per foot.  
3 shs Yellow Jacket at 1360 per foot.  
4 shs Yellow Jacket at 1370 per foot.  
3 shs Yellow Jacket at 1385 per foot.  
3 shs Yellow Jacket at 1390 per foot.  
2 shs Yellow Jacket at 1355 per ft.  
2 shs Yellow Jacket at 1385 per foot s 30.  
1 sh Yellow Jacket at 137 per foot s 30.  
4 shs Yellow Jacket at 1390 per foot.  
3 shs Belcher at 130 per foot.  
1 sh Belcher at 132 per foot.  
4 shs Belcher at 131 per foot.  
4 shs Chollar-Potosi at 205 per foot, s 30.  
22 shs Chollar-Potosi at 211 1/2 pr ft b 30.  
1 sh Chollar-Potosi at 203 per foot.  
1 sh Chollar-Potosi at 207 1/2 per foot.  
15 shs Confidence at 80 per share.  
6 shs Confidence at 80 per share, b 3.  
40 shs Confidence at 78 per share.  
\$5,000 Legal Tender Notes at 74 1/2 c s 60.  
\$10,000 Legal Tender Notes at 72 1/2 c.  
Amount of sales.....\$145,017 00

### Thursday, January 3.

96 shs Ophir at 160 1/2 per foot.  
12 shs Ophir at 167 1/2 per foot.  
96 shs Ophir at 167 1/2 per foot, s 3.  
84 shs Ophir at 165 per foot s 3.  
12 shs Ophir at 170 per foot, 15 d.  
12 shs Ophir at 165 per foot, s 30.  
24 shs Ophir at 166 per foot.  
24 shs Ophir at 167 per foot.  
72 shs Ophir at 165 per foot, s 3.  
8 shs Gould & Curry at 600 per foot, s 30.  
5 shs Pacific Ins. Fund at 167 1/2 per share.  
5 shs Confidence at 75 per share.  
4 shs Crown Point at 1300 per foot.  
78 shs Bullion at 30 1/2 per share.  
20 shs Bullion at 34 1/2 per share b 20.  
35 shs Bullion at 30 1/2 per share.  
4 shs Sierra Nevada at 2 1/2 per share.  
15 shs Sierra Nevada at 3 1/2 per share.  
20 shs Chollar-Potosi at 214 per foot.  
20 shs Chollar-Potosi at 212 1/2 per foot.  
5 shs Chollar-Potosi at 220 pr sh, s 30.  
15 shs Chollar-Potosi at 230 1/2 pr ft s 30.  
55 shs Chollar-Potosi at 230 1/2 pr foot b 5.  
5 shs Chollar-Potosi at 243 per foot, b 30.  
32 shs Chollar-Potosi at 240 1/2 pr foot.  
5 shs Chollar-Potosi at 240 per foot b 10.  
15 shs Chollar-Potosi at 235 per foot s 10.  
7 shs Chollar-Potosi at 232 1/2 pr foot.  
10 shs Overman at 18 per share.  
1 sh Yellow Jacket at 1430 per foot b 30.  
1 sh Imperial at 130 per share.  
5 shs Imperial at 127 1/2 per share.  
\$10,000 Legal Tender Notes at 72 1/2 c.  
AFTERNOON SESSION.

12 shs Ophir at 162 per foot.  
12 shs Ophir at 165 per foot.  
12 shs Ophir at 166 per foot.  
120 shs Ophir at 165 per foot s 30.  
3 sh Bullion at 31 per share.  
3 shs Belcher at 131 per foot.  
4 shs Belcher at 132 per foot.  
13 shs Belcher at 135 per foot, b 30.  
15 shs Overman at 18 per share.  
32 shs Crown Point at 1300 per foot.  
20 shs Crown Point at 1340 per foot b 30.  
20 shs Chollar-Potosi at 223 1/2 per foot.  
107 shs Chollar-Potosi at 240 per foot.  
5 shs Chollar-Potosi at 243 per foot, b 30.  
60 shs Sierra Nevada at 3 1/2 per share.  
\$20,500 Legal Tender Notes at 74 1/2 c.  
\$4,300 Sacramento Co. Bonds at 56 per et.  
Amount of sales.....\$139,427 00

### Friday, January 4.

36 shs Ophir at 160 per foot.  
34 shs Ophir at 163 per foot.  
100 shs Spring Valley W W at 60 1/2 pr et.  
5 shs Chollar-Potosi at 235 per foot b 30.  
20 shs Chollar-Potosi at 223 1/2 per ft b 30.  
20 shs Chollar-Potosi at 225 per foot, b 30.  
5 shs Chollar-Potosi at 215 per foot s 30.  
99 shs Chollar-Potosi at 215 1/2 per foot.  
14 shs Chollar-Potosi at 215 1/2 per foot.  
24 shs Chollar-Potosi at 219 1/2 pr foot.  
6 shs Chollar-Potosi at 218 per foot, b 5.  
5 shs Chollar-Potosi at 216 per foot s 30.  
3 shs Chollar-Potosi at 217 1/2 per foot s 10.  
31 shs Bullion at 28 1/2 per share.  
30 shs Bullion at 30 1/2 per share.  
45 shs Bullion at 27 1/2 per share.  
5 shs Bullion at 27 per share, s 30.  
1 sh Yellow Jacket at 1340 per foot.  
10 shs Overman at 17 per share s 30.  
5 shs Overman at 18 per share b 15.  
20 shs Overman at 18 1/2 per share b 15.  
20 shs Overman at 18 1/2 per foot, s 30.  
35 shs Overman at 17 1/2 per share.  
2 shs Cal Steam Nav Co at 64 pr cent.  
50 shs Central R. R. Co. at 40 per share.  
8 shs Belcher at 130 per foot.  
8 shs Belcher at 135 per foot b 30.  
2 shs Imperial at 129 1/2 per share.  
\$5,000 Legal Tender Notes at 74 1/2 c.  
AFTERNOON SESSION.

168 shs Ophir at 155 1/2 per foot.  
120 shs Ophir at 119 per foot, s 30.  
60 shs Ophir at 155 per foot b 5.  
12 shs Chollar-Potosi at 218 1/2 per ft.  
21 shs Chollar-Potosi at 220 1/2 per foot.  
15 shs Chollar-Potosi at 219 1/2 pr ft b 3.  
9 shs Belcher at 136 per foot, b 30.  
2 shs Belcher at 132 per foot.  
2 shs Belcher at 132 per share, s 30.  
2 shs Belcher at 131 per foot s 30.  
5 shs Belcher at 135 per foot b 5.  
7 shs Yellow Jacket at 1210 1/2 pr ft s 30.  
4 shs Yellow Jacket at 1310 1/2 pr ft.  
4 shs Imperial at 125 per share.  
12 shs Alpha, G. H. at 200 per foot.  
15 shs Sierra Nevada at 3 1/2 per share.  
10 shs Bullion at 30 per share.  
5 shs Overman at 17 per share.  
10 shs Overman at 18 1/2 per foot, b 30.  
20 shs Overman at 17 1/2 per share, s 30.  
2 shs Cal Steam Nav Co at 63 1/2 pr cent.  
Amount of sales.....\$110,070 00

THE MOLDS for electrotyping may be coated with an alcoholic solution of acetate of copper of nitrate of silver, by means of a brush, and then submitted to the action of sulphureted hydrogen. When dry, they are ready for use. This is superior to the coating where plumbago is used.

THE fact that iron is converted into steel by the absorption of carbon alone, has been proved by drilling a hole in a lump of iron, introducing some small diamonds, and hermetically sealing the opening. By subjecting the lump to heat, it became steel.

NATURAL CURIOSITIES FOR CHRISTMAS.—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of stuffed Birds, Shells, and Wax Flowers, besides Feathers, Birds and Butterflies, for tadies' hats, Shells, Sea-weeds, etc. 24v13-gr

## Trades and Manufactures.

WM. BARTLING. HENRY KIMBALL.  
**BARTLING & KIMBALL,**  
**BOOK BINDERS,**  
Paper Rulers and Blank Book Manufacturers.  
505 Clay street, (southwest cor. Sansome),  
16v12-3m SAN FRANCISCO.

JOHN DANIEL,  
(SUCCESSOR TO G. CORI)  
**MARBLE WORKS,**  
No. 421 Pine st. bot. Montgomery and Kearny, San Francisco

Mantels, Monuments, Tombs, Plumbers' Slabs.  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders rec'd.  
speciefully solicited. 5v8-3m

NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.

Barnett's Metallic Burial Caskets and Cases,  
111

THEODORE KALLENBERG,  
Maker of Models for Inventors.  
MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
LOSOPHICAL Instruments, Scales, Weights, etc. Stamps, Dies and Die Sinking, Embossing Stamps. Repair  
lug of machinery promptly attended to.  
No. 418 Market Street, San Francisco. n7-1f

Palmer's Patent  
**ARTIFICIAL LEG,**  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
629 Washington Street, San Francisco, Cal. 10v8-1m

HUCKS & LAMBERT,  
SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L. AXLE GREASE,  
Natoma Street and North Beach,  
SAN FRANCISCO.  
2v13-3m

F. M. TRUWORTHY,  
**STENCIL PLATE CUTTER,**  
—AND—  
**BRAND MANUFACTURER,**  
No. 321 Front street, corner of Commercial,  
SAN FRANCISCO.

Names for Marking Linen, Brushes, Ink and Marking  
Pots for sale. 9v13-3m

**LEATHER HOSE AND BELTING,**  
ALL SIZES.  
**SUCTION HOSE MADE TO ORDER**  
At short notice, by

**M. M. COOK & SON,**  
No. 801 Battery street,  
SAN FRANCISCO.  
13v13-3m

CARDS Sterrett & Cubery,  
\$3 PRINTERS,  
Per 1,000 533 Clay street,  
—AND— Circulars  
Lower Rates —BELOW— NEATLY  
—FOR— MONTGOMERY STREET. Printed  
5,000. 19v13-3m —AT— Low Prices.

WM. A. KOLLMYER,  
**LOOKING-GLASS**  
—AND—  
**PICTURE FRAME MAKER,**

19v12m No. 41 Third street,  
Near corner of Jessie.

**McNALLY & HAWKINS,**  
Plumbers and Gas-Fitters,  
No. 645 Market street,  
Adjoining R. C. Orphan Asylum, nearly opp. Monty street,  
SAN FRANCISCO.

**BUILDINGS FITTED UP WITH GAS,**  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Stubs, etc. 19v13-2q



## Metallurgy.

**HENRY PICKEL,**  
CIVIL AND MINING ENGINEER,  
No. 111 South Sixteenth street, Philadelphia, Penn.  
Occidental Hotel, and No. 711 Mission street,  
25v13-1m SAN FRANCISCO, CAL.

**BOALT & STETEFELDT,**  
Metallurgists and Mining Engineers  
AUSTIN, NEVADA.  
Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 1v11

G. W. WAYNARD. J. H. TIEMANN.  
**MAYNARD & TIEMANN,**  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
19v12 1y

**MARTIN & CO.,**  
Office, Stevenson House,  
Corner California and Montgomery streets (up stairs)  
—WILL CONTRACT FOR THE—  
**PURCHASE OF COPPER ORES.**  
Assaying eight percent, and upwards of Copper to the ton.  
We will make advances upon Ores of Copper.  
San Francisco, Post Office Box 1259. 22

**EUROPEAN**  
**METALLURGICAL WORKS,**  
—AND—  
**Practical Mining School,**  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphuret, pyrites, and the (so-called) "rebel-  
lous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the limit and dry way.  
Also, refining by cupellation, done at moderate rates.

**PRACTICAL MINING SCHOOL.**  
The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting,  
refining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.  
S. P. KIMBALL. J. R. MURPHY.  
10v10

**MOSHEIMER'S**  
**Metallurgic Works**  
And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.  
Practical Instructions given in Assaying, all branches of  
Metallurgy and Technology.  
Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.  
Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurets.  
CONSULTATION OFFICE:  
423 Washington street, San Francisco.  
J. MOSHEIMER,  
25v13-3m Engineer and Metallurgist.

**City College Laboratories,**  
Southeast Cor. Stockton and Geary sts.

**Practical and Analytical Chemistry**  
and Metallurgy.  
**THOMAS PRICE,**  
Professor of Chemistry,  
(Formerly of the Normal College, Swansea.)

WILL GIVE PRACTICAL INSTRUCTIONS IN QUALI-  
tative and Quantitative Analysis and Assaying. The  
course qualifies students for the application of Chemistry to  
METALLURGY, MANUFACTURING ARTS, and MINING  
PURPOSES.  
**PHARMACEUTICAL and TECHNICAL CHEMISTRY,**  
such as is required by Medical and Pharmaceutical Stu-  
dents, will be taught to such students as may require it.  
**Course of General Chemistry.**

Evening Lectures will be delivered every Tuesday, at  
half-past seven o'clock, P. M., in the Philosophical Hall of  
the College, without extra charge to the students in the in-  
stitution.  
On and after the 14th of February, the Laboratories will  
be open every day, except Sundays, from 8 A. M. to 5 P. M.  
For further particulars, address  
**REV. P. V. VEEDER,**  
Principal of the City College.  
5v12eov1f Or at 406 California Street.

**PATENT BUSINESS.**  
We have lately associated with us in the Patent and Me-  
chanical Department of the MINING AND SCIENTIFIC PRESS, a  
gentleman of superior ability and attainments, who has  
arrived direct from the leading patent agency in New York  
City, and having a faithful and reliable associate in Wash-  
ington City, we are now better than ever before prepared  
to secure the claims of our applicants, in a careful, prompt  
and efficient manner.  
**DEWEY & CO.,**  
San Francisco, June, 1886. Patent Solicitors.

**International Hotel,**  
JACKSON STREET,  
BETWEEN MONTGOMERY AND KEARNY STS.,  
SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT  
order for the accommodation of guests. Persons seek-  
ing comfort and economy will find this the best Hotel in  
the city to stop at. The Beds are new and in good order,  
and the Rooms well ventilated. The Table will always be  
supplied with the best in the market.

Prices, varying from \$1.50 to \$2 per day for  
Board and Room.  
FINE BATH HOUSE and BARBER SHOP ATTACHED  
TO THE HOUSE.

Terms belonging to the House will be in attendance  
at all the boats and cars to convey passengers to the House  
FREE OF CHARGE, and to any part of the city for 50 cents  
2v12 F. E. WEYGANT, Proprietor.

**GOVERNMENT HOUSE,**  
Corner of Sansone and Washington sts.,  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN  
every direction, every ten minutes.  
The rooms of the House are well furnished, large  
and airy, are let by the month, week or day, and are  
kept in superb order. There is a Restaurant attached for  
ladies and families, where persons can board for one-half  
they are required to pay at hotels.  
17v13-6m SANBORN & CO.

**WHAT CHEER HOUSE,**  
SACRAMENTO.  
Fire-Proof Brick Building, corner Front & K Streets,  
opposite Steamboat Landing.  
Meals, per week.....25 cents.  
Board, per week.....\$4.00  
Board and Lodging, per day.....1.00  
Single Rooms.....50  
Railroad Ticket Office and Stage Office on first floor.  
7v12-3m A. J. SENATZ, Proprietor.

## New Mining Advertisements.

**Dios Padre Gold and Silver Mining Company,**  
Alamos, Mexico.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
fourth day of December, 1886, the several amounts set op-  
posite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
William Bihler.....	299	20	\$60.00
William Bihler.....	323	5	15.00
William Bihler.....	411	15	45.00
William Bihler.....	389	25	75.00

And in accordance with law, and an order of the Board of  
Trustees, made on the fourth day of December, 1886, so many  
shares of each parcel of said stock as may be necessary, will  
be sold at public auction, by Messrs. Olney & Co., 418 Mont-  
gomery street, San Francisco, Cal., on the twenty-second  
day of January, 1887, at the hour of 12 o'clock M. of said  
day, to pay said delinquent assessment thereon, together  
with costs of advertising and expenses of sale.

E. C. McCOMB, Secretary.  
Office, No. 1 Government House, corner Sansone and  
Washington streets, San Francisco, Cal. jan5

**George Washington Gold and Silver Mining**  
Company.—Location of Works: Silver Mountain District,  
Alpine County, Cal.  
Assessment No. 16.

Notice is hereby given, that at a meeting of the Board  
of Trustees of said Company, held on the thirty-first day  
of December, 1886, an assessment of one dollar and fifty  
cents (\$1.50) per share was levied upon the capital stock  
of said Company, payable immediately in United States gold  
and silver coin, to the Secretary, at the office of the  
company, only.

Any stock upon which said assessment shall remain un-  
paid on the twenty-first day of January, 1887, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the twenty-fifth day of February,  
1887, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.

A. C. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. jan5

**Mount Teano Silver Mining Company.—Lo-**  
cation of Works: Cortez District, Lander County, State  
of Nevada.

Notice.—There are delinquent upon the following de-  
scribed stock on account of assessment levied on the fourth  
day of December, 1886, the several amounts set opposite the  
names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Booth, Lucius A.....	11	324	\$648.00
Falkner, Bell & Co.....	10	75	150.00
Gordon, John.....	15	75	150.00
Gillespie, Henry.....	19	37	74.00
Hearst, George.....	54	276	552.00
Isbell, Thomas J.....	22	12	24.00
Jones, Cyrus W.....	55	180	360.00
Krummiger, G. B.....	23	10	20.00
Leavitt, John.....	25	224	448.00
Macpherson, A. W.....	26	229	458.00
Peck, David.....	49	180	360.00
Russell, George.....	51	10	20.00
Schmiedel, Eliza.....	45	22	44.00
Vandervoort, J. C.....	28	50	100.00

And in accordance with law, and an order of the Board of  
Trustees, made on the fourth day of December, 1886, so many  
shares of each parcel of said stock as may be necessary  
will be sold at the auction rooms of Maurice Dore & Co.,  
No. 327 Montgomery street, San Francisco, California, on  
Tuesday, the twenty-second day of January, 1887, at the  
hour of 12 o'clock, M., of said day, to pay said delinquent  
assessment thereon, together with costs of advertising and  
expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. jan5

**Ophir Silver Mining Company.—Location of**  
Works, Virginia District, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on this twenty-fourth day  
of December, 1886, an assessment of five (\$5) dollars per  
share was levied upon the capital stock of said Company,  
payable in United States gold coin, on the twenty-ninth  
day of December, 1886, to the Secretary, at the office of the  
Company, Nos. 4 and 5 U. S. Court Building, corner of Jack-  
son and Montgomery streets, San Francisco, California.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-eighth day of January, 1887, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on the fifteenth day of February, 1887, to  
pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale.  
Office Ophir Silver Mining Company, Nos. 4 and 5 U. S.  
Court Building, December 24th, 1886, San Francisco, Cal.  
jan5

ROBERT GEORGE, Secretary.

**Toolumne Monahan Gold and Silver Mining**  
Company, Old Buchanan Ledge, Toolumne County, State  
of California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the third day of  
January, 1887, an assessment of one dollar (\$1) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin, to the  
Secretary, at the office of the Company, Room 22 Court  
Block, No. 635 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid  
on the fourth day of February, 1887, shall be deemed delin-  
quent, and will be duly advertised for sale at public auction,  
and unless payment shall be made before, will be sold  
on Tuesday, the twenty-fifth day of February, 1887, to  
pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale. By order of the Board of  
Trustees.

D. F. VERDENAL, Secretary.  
Office, Room No. 22 Court Block, 635 Clay street (up-stairs),  
San Francisco, California. jan5

## Mining Notices—Continued.

**Ancient River Channel Blue Gravel Compa-**  
ny.—Location of Works: Nevada County, California.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
twenty-fourth day of November, 1886, the several amounts set  
opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. W. Casey.....	53	105	\$210.00
Water H. Cook.....	50	125	250.00
J. H. Bidd.....	no certificate	125	250.00
Harry H. Bidd.....	5	10	20.00
Wm H. Ford.....	49	2	4.00
Wm H. Ford.....	51	2	4.00
Elizabeth Howard.....	54	2	4.00
H. W. Hall.....	55	10	20.00
Michael Pennell.....	5	53	106.00
Michael Pennell.....	21	20	40.00
Michael Pennell.....	23	20	40.00
Michael Pennell.....	24	20	40.00
C. W. Jones.....	25	50	100.00
R. F. Moulton.....	35	35	70.00
J. N. Moulton.....	36	30	60.00
L. F. McCarty.....	40	20	40.00
L. F. McCarty.....	47	20	40.00
L. F. McCarty.....	48	20	40.00
John H. Flood.....	64	10	20.00
Ada Fox.....	65	2	4.00
A. P. Moore.....	no certificate	75	150.00
Jane M. Stewart.....	57	30	60.00
John W. Stewart.....	58	30	60.00

And in accordance with law, and an order of the Board of  
Trustees, made on the twenty-fourth day of November, 1886,  
so many shares of each parcel of said stock as may be nec-  
essary, will be sold at public auction, by Olney & Co., No.  
418 Montgomery street, San Francisco, Cal., on the fourteenth  
day of January, 1887, at the hour of 12 o'clock M. of said  
day, to pay said delinquent assessment thereon, together  
with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.  
Office, No. 10 Government House, San Francisco. dec29

**Cosima Silver Mining Company, Cosima District,**  
State of Arizona, Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the seventeenth day  
of December, 1886, an assessment of one dollar (\$1)  
per share was levied upon the assessable capital stock of  
said Company, payable immediately, in United States gold  
and silver coin, to CHAS. BAUM, Secretary, at the office of  
this Company, 510 Battery street, opposite the Custom  
House, San Francisco.

Any stock upon which said assessment shall remain un-  
paid on the twenty-first day of January, 1887, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the eleventh day of February,  
1887, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.

CHAS. BAUM, Secretary.  
Office, No. 610 Battery street, opposite the Custom House,  
San Francisco, Cal. dec22

**Great Central Mining Company.—Location of**  
Works: Yuma County, Arizona Territory.

Notice is hereby given that at a meeting of the Board of  
Trustees of said Company, held on the twenty-fourth day  
of December, 1886, an assessment of one dollar (\$1) per  
share was levied upon the capital stock of said Company,  
payable immediately in United States gold and silver coin,  
to the Secretary and Treasurer, at the office of the Com-  
pany, No. 302 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid  
on the twenty-sixth day of January, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Thursday, the fourteenth day of February, 1887,  
to pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale. By order of the Board of  
Trustees.

O. D. SQUIRE, Secretary.  
Office, No. 302 Montgomery street. dec29

**Hanscom Copper Mining Company.—Location:**  
Low Divide District, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the  
shareholders of the above named Company will be held on  
FRIDAY, the 21st day of December, 1886, at 7 o'clock P.  
M., at the office of Hanscom & Co's Elina Iron Works,  
Fremont street, near corner of Tehama street, San Francisco,  
for the election of Trustees to serve the ensuing year, and  
for the transaction of other business.

S. S. SWEET, Secretary.  
dec5

The above meeting was adjourned to Thursday, January  
3d, 1887, at the same hour and place.

S. S. SWEET, Secretary.

**Hanscom Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1886, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 609 Market street, San Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1887, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1887, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.

S. S. SWEET, Secretary.  
Office, No. 609 Market street, San Francisco, Cal. dec29

**STOCK CERTIFICATES,**  
**STOCK TRANSFER JOURNALS,**  
**STOCK LEDGERS,**  
**ASSESSMENT RECEIPTS,**  
And all other Blanks, Blank Books, etc., required by  
Mining and other Corporations, kept on hand or printed to  
order on short notice, at moderate prices, at the office of  
the MINING AND SCIENTIFIC PRESS.

**American and Foreign Patents.**—Letters Patent  
for Inventions can be secured in the United States and foreign  
countries through the MINING AND SCIENTIFIC PRESS PATENT  
AGENCY. We offer applicants reasonable terms, and can  
assure them of a strict compliance with our obligations,  
and a faithful performance of all contracts. For reference,  
we will furnish the names of numerous parties for whom  
we have obtained patents during the past two years.

**Hope Gravel Mining Company.—Location of**  
Works: Grass Valley, Nevada County, California.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment (No. 1) levied on the  
fifteenth day of November, 1886, the several amounts set  
opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brown, S. G.....	57	60	\$30.00
Brown, S. G.....	58	10	10.00
Brown, S. G.....	59	10	10.00
Madge, Fred.....	21	78	78.00
Madge, Fred.....	23	78	78.00
Madge, Fred.....	30	11	11.00
Madge, Fred.....	34	30	30.00
Madge, Fred.....	46	78	78.00
Madge, Fred.....	49	78	78.00
Madge, Fred.....	51	12	12.00
Sherry, James.....	17	156	156.00
Wood, John H.....	59	100	100.00

And in accordance with law, and an order of the Board of  
Trustees, made on the fifteenth day of November, 1886, so  
many shares of each parcel of said stock as may be necessary  
will be sold at public auction, at the salesroom of Cobb &  
Sinton, No. 407 California street, San Francisco, California,  
on Tuesday, the fifteenth day of January, 1887, at the hour  
of 12 o'clock, noon, of said day, to pay said delinquent as-  
sessment thereon, together with costs of advertising and ex-  
penses of sale.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. dec29-3v

**Josephine Copper Mining Company, Gopher**  
District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-eighth day of  
November, 1885, an assessment of one dollar (\$1) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin, to the  
Secretary, E. C. McCOMB, No. 1 Government House, San  
Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the fifteenth day of January, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public au-  
ction, and unless payment shall be made before, will be sold  
on Monday, the fourth day of February, 1887, to pay the de-  
linquent assessment, together with costs of advertising and  
expenses of sale. By order of the Board of Trustees.

E. C. McCOMB, Secretary.  
Office, No. 1 Government House, corner Sansone and  
Washington streets. dec15

**Keystone Mining Company, Location of Works**  
Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-first day of  
November, 1886, an assessment of ten dollars (\$10) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold coin, to the Secre-  
tary, at this office, No. 440 California street, San Francisco,  
California.

Any stock upon which said assessment shall remain un-  
paid on Monday, the twenty-first day of January, 1887, shall  
be deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Monday, the eleventh day of February,  
1887, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.

O. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. no24

**Melones and Stollins Gold, Silver and Cop-**  
per Mining Company.—Location: Carson Hill or Flat  
Mining District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the thirteenth day of  
December, 1886, an assessment of two (\$2) dollars per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin,  
to the Secretary, at the Company's office, 606 Montgomery  
street, San Francisco, California.

Any stock upon which said assessment shall remain un-  
paid on the fourteenth day of January, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment is not made before,  
will be sold on the fourth day of February, 1887, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trust-  
ees.

A. DE SENAILHAC, Secretary.  
Office, 606 Montgomery street, San Francisco, Cal. dec22

**Noaparril Gold Mining Company, Location of**  
Works: Toolumne County, California.

Notice is hereby given, that at a meeting of the Board  
of Trustees of said Company, held on the twenty-sixth  
day of December, 1886, an assessment of one dollar and  
fifty (\$1.50) cents per share was levied upon the capital  
stock of said Company, payable immediately, in United  
States gold and silver coin, to the Secretary, at the office  
of the Company, 423 Washington street, Room 5, San Fran-  
cisco.

Any stock upon which said assessment shall remain unpaid  
on the twenty-eighth day of January, 1887, shall be deemed  
delinquent and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the eighteenth day of February, 1887, to pay  
the delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

S. A. ELDRIDGE, Secretary.  
Office, 423 Washington street, San Francisco. dec29

**Siskiyou Mining Company.—Location of Works:**  
Middle Fork of Humboldt Creek, in the County of Siski-  
you, State of California.

Notice is hereby given, that at a meeting of the Board  
of Trustees of said Company, held on the tenth day of  
December, 1886, an assessment of five (\$5) dollars per  
share was levied upon the capital stock of said Company,  
payable immediately, in United States gold and silver  
coin, to the Secretary, at the office of the said Company,  
No. 43 Exchange Building, N. W. corner of Montgomery  
and Washington streets, in the City and County of San Fran-  
cisco.

Any stock upon which said assessment shall remain un-  
paid on the twenty-first day of January, 1887, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made be-  
fore, will be sold on Wednesday, the twentieth day of Fe-  
bruary, 1887, to pay the delinquent



## THE EXCELSIOR GRINDER AND AMALGAMATOR.

In the engraving herewith presented, A represents the Rim of the Pan; B, Muller; C, Legs; D, Cross-Frame; E, Gearing; F, Screw; G, Lever; H, Dash-Boards; I, Key; a, Dies; c, Shoes, and o, Openings.

The relative grinding capacities of "The Excelsior" Grinder and Amalgamator, of the Flat Bottomed Pan, and of the Conical Pan when properly constructed, are respectively 177, 118 and 132.

That is, the respective mullers being of the same diameter, same weight, same hardness, and running at the same velocity "The Excelsior Grinder and Amalgamator" will reduce one hundred and seventy-seven tons of ore, the Flat Bottomed Pan one hundred and eighteen tons, and the Conical Pan one hundred and thirty-two tons to the same degree of fineness in the same time.

The wear to the Shoes and Dies at their grinding surfaces in the Excelsior Grinder and Amalgamator, is perfectly uniform, thus securing evenness of reduction to the pulp, as well as steadiness of motion to the muller. Uniform wear of the grinding plates has been attained in no other than that of the Tractory form—nor can it be.

Another property of excellence in this machine is that the metal or substance to be amalgamated passes direct from the grinding surfaces into the quicksilver; thus excluding the possibility of its becoming coated with any foreign substances, after having been furnished. It is truthfully said "that the Tractory-formed Pan as a Grinder is no equal, and as an Amalgamator no superior."

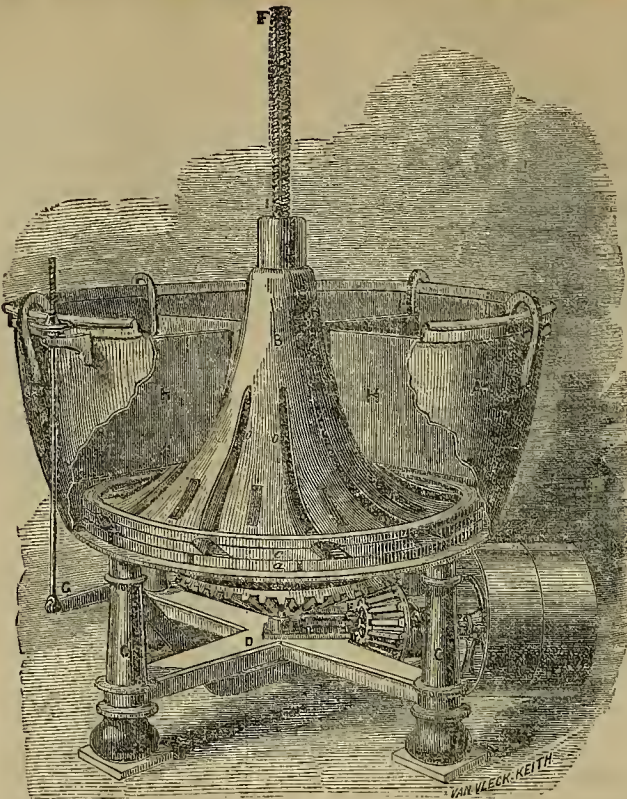
As a whole, it is far superior to any other pan in use.

MANUFACTURED AT THE

Union Iron Works and Golden State Iron Works.

WHEELER & RANDALL, Inventors.

The undersigned having had several years of experience in practical quartz mining operations, will ever take great pleasure in furnishing parties interested in mining and machinery any desired information which they may possess.



### Machinery.

V. CUSHING, Agent

—FOR THE—

Purchase & Shipping of Machinery  
OF ALL KINDS.

Especially attention given to Quartz Mill Machinery and Findings, and Miners' Material of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to—

Governor F. F. Low; C. T. Meader, Stockton; Jacob Underhill & Co., San Francisco; J. W. Stowe, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco.

Cosley & Risdon, San Francisco; Geo. R. Givens, Chief Engineer of Cal. S. Nav. Co., San Francisco.

4v12

### HUNTER'S

IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

### VARNEY'S

PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and sellers for themselves, at the

PACIFIC FOUNDRY,

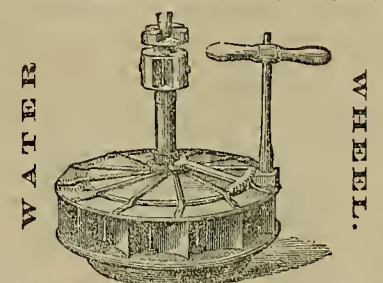
1v1

San Francisco.

**Economy in Advertising.**—The Mining and Scientific Press is the best and most economical mining advertising medium in this city. Our terms are less than ours have the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

The Press is a large, sixteen-page paper, and is truly a valuable assistant to the mining interests of the Pacific Coast.—[Nyo County News.]

### LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALLED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. V. McMillan, Lexington, Santa Clara County. Send for Circular to

KNAPP & GRANT,  
Agents for California,  
25v13-1yq 310 Washington street, San Francisco

### BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION,

and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

### THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
13v12 416 Market street, San Francisco.

### BLAKE'S QUARTZ BREAKER!

PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,  
Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

### Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,

114 Beale Street, San Francisco.

2v12 3m

A splendid paper, and should have a good list of subscribers in prosperous Grass Valley.—[O. V. National]

### Hunt's California Pump

Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years. Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Irrigating, Saw Frames, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.

### PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3—3-inch cylinder, 6-inch stroke.....	\$30 00
No. 4—3½-inch cylinder, 6-inch stroke.....	35 00
No. 5—4-inch cylinder, 6-inch stroke.....	45 00
No. 6—5-inch cylinder, 8-inch stroke.....	60 00
No. 8—8-inch cylinder, 12-inch stroke.....	90 00

A liberal discount made to the Trade.

For further particulars, send for Circular.

E. O. HUNT,  
21v13f 23 Second and 110 Jessie streets, San Francisco.

J. MARSHALL. W. WYLIE.

### GLASGOW

IRON AND METAL IMPORTING CO.,

No. 27 Fremont street,

SAN FRANCISCO.

Be to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined

Bar Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes,

GAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market.

Country Orders punctually attended to. 19v13g



### STANDARD SOAP COMPANY'S WASHING POWDER,

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleaning. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for using in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtues. Manufactured at 207 Commercial street, San Francisco.

ELECTROTYPE CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

**COL. BUEL'S MINE AND MILL.**—From a letter to the "Territorial Enterprise," dated Belmont, Nyo county, December 20th, we condense the following: "Col. Buel commenced working the Highbridge mine, by removing the croppings the whole length of the ledge. The best of the rock was sent to Austin, but nearly all the balance was worked at his mill here. He has now reached a depth of twenty feet the whole length of the claim. This shows a well defined, compact ledge, seven feet in thickness, having increased in going down from four to seven feet, and containing better ore at the bottom than was found anywhere above. He has sunk an incline to a depth of twenty feet from the bottom of the cut made by the removal of the croppings, etc., which cut was about twenty feet in depth. At the bottom of this incline there is a streak three feet in thickness, every pound of which shows "horn silver," assaying seventy per cent. of pure silver. I visited the mine with Colonel Buel, a few evenings since. We found a large quantity of rock at the mine, which he estimated would mill not much short of \$500 per ton. I think his estimate moderate. The rock which he estimated would yield \$101 per ton looks inexhaustible." Colonel Buel effected his purchase of the mine about the first of June last. He immediately commenced to remove his mill from Austin and erect it here. The first load of machinery arrived on the first of June, and by the middle of August he was shipping large quantities of bullion, and has continued to do so ever since. Unfortunately for him, his mill is old and worn out, making frequent repairs necessary, and, of course, is often stopped for that purpose, which, for want of conveniences, makes the time consumed longer than it would be. But with all these disadvantages he succeeded in pouncing out \$28,000 worth of silver bricks last month. Working the mine and mill as they have been worked since starting, this mill alone will yield a net yearly income of \$120,000."

**COPPER IN NEVADA.**—The Reveille predicts a brilliant future for the copper mines of the State, to come when the projected railroad system is completed, and says:

We doubt if in any part of the world richer ores of copper, or in greater quantities, can be found. There are veins of copper in San Antonio, Palmetto, Clarendon and other districts on the south, in our own neighborhood, and in Ravenswood, Kinsley and Battle Mountain Districts lying to the north. From all of these, and many other sections, quite large quantities of ore are from time to time brought to this city for exhibition. As an instance of one mine, we will present the Dunderberg ledge, of Battle Mountain District, which is represented as being two hundred feet in width, and composed of the red oxyd of copper, quartz and limestone, with such an abundance of ore running in small veins through the mass, that miners engaged in prospecting the ledge say that enough could be obtained of fifty per cent. ore to give home freights to all the ships that come to San Francisco.

**THE EMPEROR OF BRAZIL,** whose promised visit to this country has already been announced, will be the guest of Prof. Agassiz during his stay in New England. The visit will take place as soon as the Paraguayan war has been brought to a close. The Emperor is one of the most enlightened rulers of the age. He is quite a philosopher, well versed in chemistry and other sciences, and an untiring student. His love of learning was fully exemplified in the interest he manifested in the recent trip of Prof. Agassiz and party to Brazil. His visit to this country has also been planned, in part, to gratify his inclination in this direction.

**NEVADA BULLION FOR 1866.**—The Esmeralda Union estimates the bullion products of this State, for the current year ending the first of next January, at sixteen millions of dollars—and that about thirteen millions was taken out of the Comstock ledge. The same paper says: "The mines of Nevada alone have furnished to commerce and the general business and trade of the country a metallic-money medium of exchange to the amount of sixty millions of dollars within the past six years."

**INDIANS FOR THE PARIS EXPOSITION.**—A party of North Western Indians, consisting of thirty-eight men, eight squaws and six children, with their war and agricultural implements, will leave New York about the 10th of March for Paris. They are sent at the urgent request of the Imperial Commissioner.



**JOHN TAYLOR & CO.,**  
IMPORTERS,  
AND DEALERS IN  
**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS LADD & OERT  
LINO (London) and BEEKER & SONS (Antwerp, Bel-  
gium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern  
States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE  
CASES, GOLD SCALES, CHEMICAL GLASSWARE, and  
every article required for ASSAY OFFICES, LABORATOR-  
IES, etc. We have given this branch of our business par-  
ticular attention, to select such articles as are necessary  
in the development of the mineral wealth of the coast.  
A Full Assortment of DRUGGISTS' GLASSWARE and  
DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, con-  
stantly on hand.  
San Francisco March 6, 1865

**IMPORTANT**  
—TO—  
**WORKERS OF GOLD & SILVER ORES.**

THOSE INTERESTED WILL FIND IT TO THEIR AD-  
vantage to call on MR. WILLIAM MARSH, at Prof.  
W. P. Blake's office, and obtain a Business Circular, just  
published by the WURTZ AMALGAMATION COMPANY of  
New York, who have secured, under the Patents of Prof.  
Henry Wurtz, the sole and exclusive right to the use of so-  
dium in amalgamation. Mr. Marsh is prepared to supply  
the licenses of the Company, with the material for applying  
this new and wonderful discovery, by which, in the words  
of President Barnard, of Columbia College, "two grains of  
gold may be gathered where but one was before." 19v13-2a

**MELLVILLE C. KEITH, M. D.,**  
Homoeopathic Physician,  
No. 655 Howard Street, between Second and Third,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
18v13-6mtr

**Mammoth Quartz Lode, Keysville**  
District, Kern County.

"To all whom it may Concern,"  
ALL PARTIES negotiating for interests in the above Lode,  
would do well to examine titles before investing, as the  
legal title to a considerable portion thereof is vested in  
the undersigned.

WILLIAM MARSH,  
W. L. KENNEDY.  
Keysville, Kern County, Oct. 1, 1866.  
16v13ur5m

**MOUNT DIABLO COAL.**  
**CHEAP FUEL!**  
Cheaper than the East.  
From the Independent Mine, at \$10 per ton.  
GREENHOOD & NEWBACHER,  
Nos. 207 and 209 Sansome street, between California  
and Pine.  
11v13-3m

**WOODWARD'S GARDENS!**  
**MUSEUM,**  
Art Galleries, Conservatories and Zoolog-  
ical Grounds,  
On Mission and Valencia streets, between Thirteenth and  
Fourteenth streets.

**Open Every Day!**  
ADMISSION:  
To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all  
departments.  
These Gardens are accessible by the Howard, Folsom and  
Market street Cars.  
Schools and Charitable Institutions, accompanied by guar-  
dians, free on Mondays and Fridays.  
23v13qr

**Baldness! Baldness!!**  
CAN BE PREVENTED, BY USING

**Mayhew's Balsamic Hair Stimulant!**

THIS REPARATION HAS BEEN USED AND RECOM-  
mended by some of the most prominent members of the  
medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing  
the hair from falling off, and for producing a new growth,  
IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompany-  
ing each bottle. Prepared by

**W. E. MAYHEW, Druggist,**  
N. W. Corner Fourth and Howard streets San Francisco.

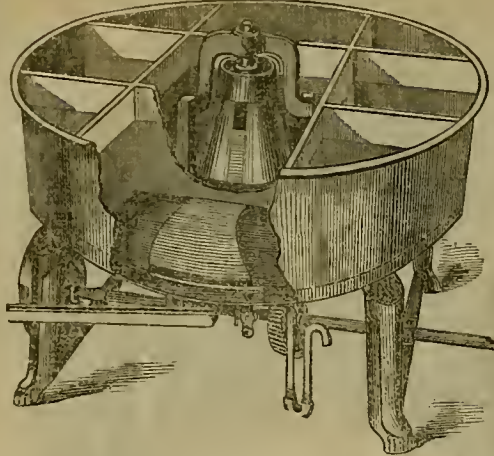
He gives his personal attention to the preparation of  
Physicians' prescriptions.

Also, has constantly on hand a choice assortment of  
French, English and American Toilet Articles  
16v13-5w

**Important to Californians.**—Many inventors have  
lately had their claims for Patents seriously (and in some  
cases fatally) delayed by the unqualification of agents who  
have not complied with the Government license and revenue  
laws, as well as other new and imperative regulations.  
These discrepancies, although arising from the inexperience  
of honest agents, are none the less dangerous to applicants  
for patents, whose safest course is to trust their business  
with none but active and experienced solicitors. The MIN-  
ING AND SCIENTIFIC PRESS PATENT AGENCY has strictly com-  
plied with the regulations of the Department, and properly  
filed all necessary papers as Claim Agents.

We receive, regularly as clock work, this exceedingly  
valuable and interesting Journal.—[Napa Reporter.]

**Knox's Improved Patent Amalgamator and Separator,**  
With Palmer's Patent Steam Chamber or Die.



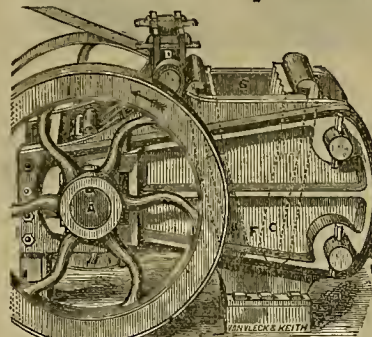
For further particulars, inquire of

14v13-12q

At the Golden State Iron Works, No. 19 First street, San Francisco.

**Machinery.**

**Brodie's Patented Improvements**



FOR THE TREATMENT OF

**Gold and Silver Ores.**

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully  
called to this improved Machine for Breaking or  
Crushing Quartz, or other Rock, possessing, as it does, sim-  
plicity of action and lightness of construction, so far as is  
compatible with strength and durability. In consequence  
of these advantages, the advertiser is enabled to offer  
these machines to the public at the following low terms:  
No. 1.—Or 10-inch Crusher, capable of reducing from  
three to four tons of quartz per hour, no piece be-  
ing larger than a walnut—price.....\$800  
No. 2.—Or 15-inch Crusher, capable of similarly pating  
through five to six tons per hour.....850  
No. 3.—Or 18-inch Crusher, will in a similar manner  
crush from seven to eight tons per hour.....1,300

**EXPLANATION OF THE ABOVE ENGRAVING.**  
The frame is made of cast iron, bound with heavy  
wrought iron bands, making it very strong, and at the same  
time light and portable. The crusher is bolted to a wood  
frame of sufficient light to clear the fly-wheel, and allow  
the crushed quartz to pass off. The dotted lines show the  
movable and stationary jaws. Letter A represents the  
eccentric shaft by which the power is applied direct to the  
movable jaw. B represents the movable jaw, and C the  
fixed jaw. D represents the link or radius bar. E repre-  
sents the bolts for regulating the opening, F, which can be  
regulated at pleasure, so as to graduate to the size to which  
it is intended the quartz shall be crushed. G represents the  
feed opening, by which the size of the machine is desig-  
nated.

The arrow on the fly-wheel shows the direction to drive  
the eccentric, which, in combination with the link, D, gives  
the movable jaw, B, a forward and downward motion at the  
same time, and which makes the hardest rock yield and  
separate into fragments of any desired size.

The above Crushers have been recently erected and are  
now successfully employed at Bear Valley, Mariposa county,  
Rawhide Ranch, Tuolumne county, Excelsior Mine,  
Lake District, Nevada county, and can be seen in operation  
at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of  
this Crusher, has been received from the Superintendent of  
the "Rawhide Ranch" Mine, in Tuolumne county:  
Rawhide Ranch, Tuolumne Co., Sept. 28, 1866.  
JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives  
me pleasure to inform you that I have for the past three  
months had one of your largest sized Rock Crushers in  
use, at the Rawhide Ranch Mining Company's Mill, which  
is entirely met my expectations; and I have no hesita-  
tion in recommending it to all who are in need of a machine  
for rapidly, cheaply and properly preparing quartz for the  
stamps. Yours truly,  
R. P. JOHNSON,  
Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGA-  
MATING BARREL.**—This Barrel obtained a premium at  
the Fair of the Mechanics' Institute in San Francisco, in  
1864. Further particulars will be afforded on application  
to the subscribers.

Those infringing the patent rights to the above improved  
Barrel, are hereby informed that on and after the 1st No-  
vember, 1866, the royalty charged for using the same will  
be raised to the sum of \$100 per Barrel.

A diagram, with explanations of this machine, will be  
found in the "Mining and Scientific Press," of September  
25th, 1866.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR  
DRY CRUSHING.**—This Dry Crusher has been found the  
most economical and effective mode of crushing ores in  
Mexico, California and Nevada. Diagrams and explana-  
tions afforded on application to the subscribers.  
A drawing and full description of this machine will be  
found in the Mining and Scientific Press of Sept. 22d, 1866.  
**BRODIE & RADCLIFF,**  
Express Building, 402 Montgomery street,  
San Francisco.  
12v13-1f

**Notice to Miners,**  
**Well-Borers and Water Companies.**

**M. PRAG IS NOW PREPARED TO MANUFACTURE**  
Hydraulic and Artesian Well Pipes in the best work-  
manlike manner, and at the lowest market rates. Having  
made large additions to my stock of machinery for this  
branch of business, I am prepared to fill all orders with dis-  
patch, and guarantee entire satisfaction. I also manufac-  
ture Mississippi Stoves, of the latest improved patterns, for  
vessels of all classes. Also, Ship Humming-bells.  
M. PRAG,  
8v13-1y Stove Store, No. 125 Clay street, below Davis.

Such a journal has been needed on the Pacific Coast. The  
Press fills the bill.—[Reese River Reveille.]

THIS CUT REPRESENTS AN AMAL-  
gamator and Separator that has stood the  
test of about twenty years' practical working in  
the gold mines of California, and for nearly  
the same time in the silver mines of Nevada,  
having been introduced into the first steam  
mills built in the then Territory, since which  
time they have been successfully working  
against all competition.

The great advantages these Amalgamators  
have over any others, are—

1st. Much less Cost.

2d. They do not "flour" the mercury,  
and collect any that may have been "sick-  
ened" in the battery or grinders.

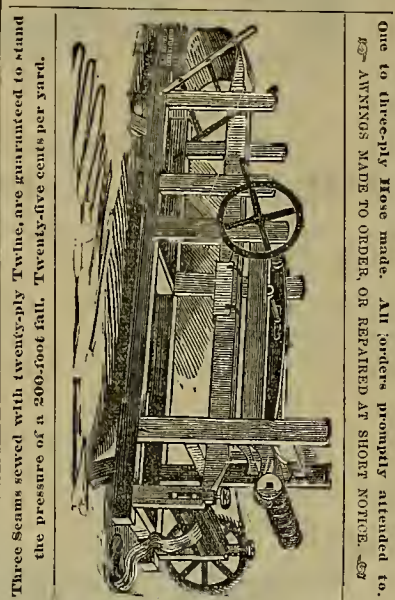
3d. The "sloshing" motion given to the  
pulp (by the revolution of the miller under  
the stationary frame) against the amal-  
gamated copper plates that are fastened to  
the frame, and by this means catching the  
fine gold and mercury that will not settle.

4th. The gate in the cone, through which  
the pulp is discharged, from the top, and  
where there is the least motion, almost  
precluding the possibility of any granulated  
mercury or fine gold escaping.

There are over 500 of them in use in Cali-  
fornia and Nevada, where those interested  
can see their practical workings.

ISRAEL W. KNOX, or  
W. A. PALMER, Inventors,

**PATENT HYDRAULIC HOSE SEWING**  
By S. HOWARD,



No. 326 DAVIS STREET, San Francisco.  
22v13-3m

**STRONG & CO'S**  
**CELEBRATED UNION PAN!**

A fast Grider and thorough Amalgamator; has double  
Millers, Rolling Shoes and reverse action.  
Millmen and others are respectfully invited to examine  
this Pan, before purchasing others, as it gives the best satis-  
faction. Can be seen in operation, daily, at the San Fran-  
cisco Foundry, Fremont street, near Mission.  
Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 G. W. STRONG, Assayer.

**NITRO GLYCERINE.**  
**Nobel's Patent Blasting Oil!**

WE ARE NOW PREPARED TO SELL NOBEL'S PAT-  
ent Nitro Glycerine. The same is stored with Mr.  
C. S. SWENSON, at Michigan Bluff, Placer county, from  
where the Oil has to be received by purchasers.  
Application to be made to Mr. C. S. Swenson, or to the  
undersigned.

**IGNITERS AND CARTRIDGES!**  
For sale at the same place.

Mr. Swenson is willing, if desired, to show purchasers  
the mode of blasting, either at his own mine, Michigan  
Bluff, or at the places of purchasers.

Pamphlets, with minute instructions, will be presented  
to every purchaser or applicant.

BANDMANN, NIELSON & CO.,  
210 Front street, San Francisco.

**FOR SALE!**  
**QUARTZ AND MINING MACHINERY**

ONE GARDNER'S THUNDERBOLT CRUSHER, LARGEST  
size and best quality; is entirely new, with all extra  
with a large lot of other Quartz Machinery, including En-  
gines, Boilers, etc.  
16v13 COFFEY & RISDO

**Just Published.**

**THE PHILOSOPHY OF MARRIAGE, BEING FOUR IN-  
portant Lectures on FUNCTIONS and DISORDERS of  
the Nervous System and Reproductive Organs, to be had by  
addressing and enclosing twenty-five cents, postage stamps,  
to Secretary PACIFIC MUSEUM OF ANATOMY, Mont-  
gomery street, San Francisco.**  
12v13-1v

It contains correspondence from different sections, giv-  
ing accounts of new discoveries in gold, silver and cop-  
per, and should be taken by every person that wishes to  
keep well posted on the developments of our State and the  
Territories.—[Mountain Messenger]

**HALL'S SARSAPARILLA,**  
YELLOW DOCK, AND IODIDE OF PO-  
TASS.

**THE BEST BLOOD PURIFIER KNOWN.**

Persons that are troubled with Rheumatism,  
Scrofula, Neuralgia, Morbid Liver, Salt Rheum,  
Pimples, Bolls, or any of the many diseases that  
originate from Impure Blood, would find it much to  
their advantage to give this justly celebrated  
article a trial. One or two bottles are quite suf-  
ficient to convince the most skeptical of its mer-  
its. It contains neither Spirit, Arsenic nor Mer-  
cury, which cannot be truly said of any other  
preparation called "Sarsaparilla."  
SHEPARDSON & GATES, Prop's.  
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22v13-3m

**TRUSSES! TRUSSES!!**

**Abdominal Supporters!**  
**Shoulder Braces, Etc., Etc.**

WE WOULD CALL THE ATTENTION OF DEALERS  
and others to our complete assortment of these goods,  
including Martlett & Bumpkin's Celebrated BALL AND  
SICKLE REVERSIBLE TRUSS, which is decidedly the  
best article ever introduced into this market. By a com-  
bination of the movement of the ball and socket, and the  
movable arm, any desired angle may be obtained. Call and  
examine for yourselves. A liberal discount to the trade.  
SHEPARDSON & GATES, Agents.  
22v13-3m Corner Sansome and Commercial streets.

**Rheumatism!!**  
**Still Another Witness!**

LATHROP, Cal., Sept. 19, 1866.  
(White Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years,  
been afflicted with Chronic and Inflammatory Rheumatism,  
and the sufferings and tortures I endured to consequence  
cannot be told. I have, at an expense of thousands of dol-  
lars, employed many physicians, both in this country and  
in Europe (where I was born and resided many years),  
among which were several eminent professors of medicine,  
and experienced no benefit from their treatment, more  
than attunes a slight and temporary relief.  
About two years ago I was induced by some persons who  
had been cured by it to use Richard's Remedy for Rheuma-  
tism. It is enough to say that I was almost immediately re-  
lieved, and that I have not suffered with it since. I keep  
the medicine on hand, and, on the first approach of any  
returning symptoms, I take a few doses, which invariably  
puts it to flight. I therefore cordially recommend it to the  
afflicted as an unfailing remedy for Rheumatism.  
25v13 FREDK. FABER.

**The Mercantile Gazette**

—AND—  
**PRICES CURRENT,**

**E. D. WATERS, Proprietor.**

Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

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For enclosure in letters, is also published every

13v13f STEAMER DAY.

**REPORT**

—OF THE—

**COMMITTEE**

—ON—

**SEWING MACHINES!**

**California State Fair, 1866:**

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY:  
Your Committee on Sewing Machines beg leave to re-  
port that we have examined the several Sewing Machines  
on exhibition, (the Grover and Baker, the Wheeler &  
Wilson, and the Florence,) and find that

**FOR GENERAL FAMILY USE**

—THE—

**"FLORENCE"**

—IS—

**"THE BEST."**

(Signed) J. N. ANDREWS,  
THOMAS C. McHALE,  
J. ELKUS.

If there is a FLORENCE SEWING MACHINE within  
one thousand miles of the San Francisco Office, it will be at-  
tending well and giving perfect satisfaction, it will be at-  
tending to, if I am informed of it, without expense to the  
owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco.  
17v13

With the last number is an index to the whole volume,  
most useful and valuable to those who keep files of that  
paper.—[Susan Courier.]



## THE UTILIZATION OF PEAT.

There is much reason to believe that peat is soon to be elevated from its original employment, as a fuel of the lowest order, to an important position, not only as a fuel, but also as a material for useful manufactures. Recent experiments with regard to its steam-making qualities, in a locomotive on a railroad in Connecticut, have quite astonished engineers, and have led to numerous other like experiments on different railroads. A most successful trial has been made on the line from Kingston to Montreal, in Canada, where a distance of 177 miles was made, at a rate of 25½ miles per hour, including stoppages, at a cost of forty-nine shillings; the same distance has heretofore averaged 120s. for coal, and 123½s. for wood!

The advantage of peat in the above trial is certainly most extraordinary, unless there is a greater relative difference there between the cost of peat and coal or wood, than is usually found elsewhere. Yet, in addition to the advantage of cost, a gain in time of fifty-two minutes is also included. This statement is communicated to the London "Mining Journal," on the authority of W. Austin, a civil engineer.

The Pittsburg "Manufacturers' Journal" states that the Grand Trunk Railroad is making extensive preparations to introduce it on that important line of travel. The correct working and manipulation of peat as a fuel is rapidly becoming understood, and practice will soon prove it to be a most invaluable substitute for coal and wood. In view of what has already been done, is it not worth the while of California capitalists and men of business to look into the matter, with the view of turning to profitable account the immense peat deposits of our own State; the more especially from the fact that we have none but very inferior coals on this coast.

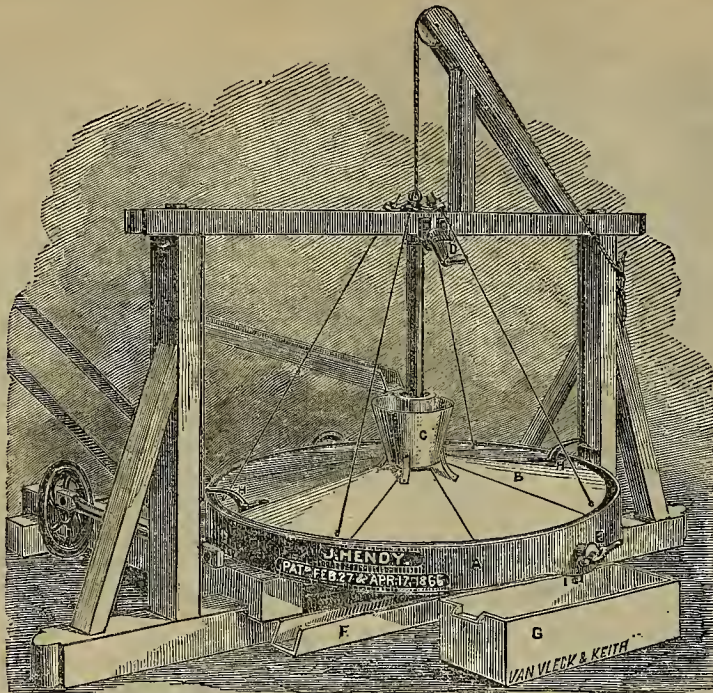
It is not for steam fuel alone that peat has been found valuable. Encouraged by success in that direction, a most successful experiment has recently been made in employing it for iron smelting. The trial was made at McDougall's car-wheel factory, in Pittsburg. The material there used was "Hodge's peat." The cupola was charged with two layers of iron and anthracite coal. The third or topmost layer was iron and peat. The time was forty minutes less than with coal alone. The iron smelted by the peat was hotter when drawn off from the coals, and was said to be more compact and more like wrought iron than the other. The test was a severe one, the proportion being twelve of iron to one of peat. The proportion for coals being seven to one. Renewed experiments are to be made shortly.

The very latest, and perhaps the most unexpected effort of utilizing peat, comes to us from England, where Mr. T. G. Chilsin, of Hutton Garden, has invented a process for so treating peat by chemical and mechanical operations as to bring it into a condition in which it may be readily employed in the manufacture of various articles of ornament or usefulness, rigid or flexible—very much resembling, in that condition, prepared India-rubber and caoutchouc. The manner in which this is done is elsewhere described in the present issue, under the head of "Recent Inventions."

THE CALIFORNIA ACADEMY OF NATURAL SCIENCES has removed to 622 Clay street, north side, between Montgomery and Kearny. The regular annual meeting of the Academy occurs on Monday evening next, Jan. 7th. The rooms designed for the Cabinet and for meetings is 50 x 20 feet, and a reading and library room adjoining is 20 x 20.

ANY PERSON who may have a small amount of money, which they would like to venture, either as purchaser or partner in a new mining invention, will find an opportunity by reference to our advertising columns of to-day.

## HENDY'S CONCENTRATOR.



### Hendy's Improved Patent Self-Discharging Sulphurets PRATER CONCENTRATOR

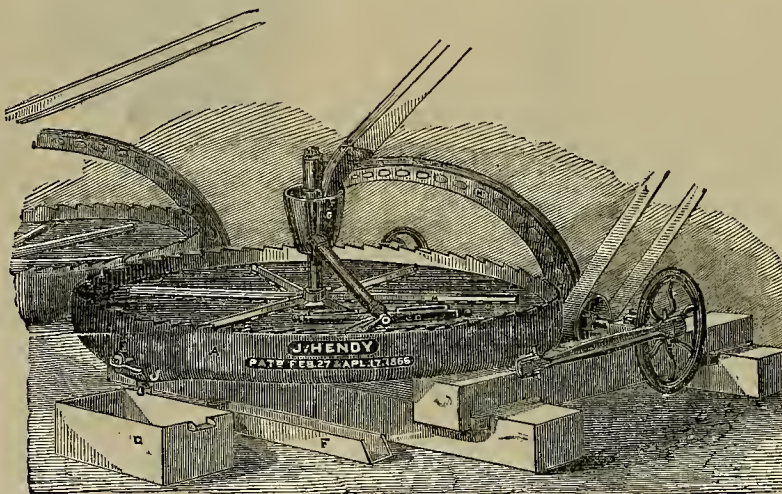
Is Receiving Universal Favor.

Reference is made to the following Mills which have them now in use:

BENTON MILL, Bear Valley, Mariposa County.  
LOUISIANA MILL, near Conditville, Mariposa County.  
OPHIR MILL, near Newcastle, Placer County.  
C. H. SCHNABLER'S MILL, Doly Flat, Placer County.  
JERSEY BLUE, near Folsom, Cal.

SPRING HILL MILL, Amador, Amador County.  
GOLDEN GATE MILL, Volcano, Amador County.  
RAWHIDE MILL, Jamestown, Tuolumne County.  
TRIUNFO G. & S. M. CO., Lower California, Mexico.

And in use in many other parts of this State, also in Idaho, Arizona, Colorado and Mexico.



### Hendy's Latest Improved Concentrator, for Gold and Silver Ores, With Revolving Stirrers and Rotary Distributor.

By this improvement the conical feeding distributor has been entirely done away with. The feed in this machine is made to enter the conical hopper; from thence it passes through the hollow arm, leading to the T attachment, marked D, which is made to sweep slowly around the circumference of the pan, by means of the ratchet teeth upon the upper edge of the same, into which two pawls are seen to work. This motion is obtained from the vibrating action of the pan, as in common use. Upon the under side of the T attachment to the arm, are small openings or perforations, through which the pulp is dropped from the feeder into the pan. The constant revolution of this arm secures a more uniform feed than can be obtained from the conical feeder. A set of stirrers, with small projectors or teeth is shown, which is also kept in revolution with the feeding arm, the design of which is to prevent the sand from packing near the center, where the motion is diminishing. The discharge orifice and box for receiving the sulphurets will be readily distinguished at box C. These pans may be so connected, as in the cut, that two can be driven by one shaft and pulleys. These machines have been thoroughly tested, and pronounced a perfect success.

#### Certificates:

JOSHUA HENDY, Esq., Dear Sir: I have been using three of your Improved Concentrators for the past four months, at the Spring Hill Mill, and they give perfect satisfaction.  
Yours truly,  
WM. H. HOOPER.  
Two of these Improved Machines have been ordered by Mr. Hooper, for the Gold Hill Mill, at Grass Valley.

JAMES TOWN, TUOLUMNE COUNTY, CAL., July 15th, 1866.  
JOSHUA HENDY, Esq., San Francisco.—My DEAR SIR: It gives me pleasure to inform you that the four "Improved Self Discharging Prater Concentrators," which I purchased from you, have now been in operation in the Rawhide Mining Company's Mill for more than two months, and have more than realized my expectations. I am free to say it is the best Machine for saving Quicksilver, Amalgam, and Sulphurets that I have ever used or seen used for that purpose. I shall take pleasure in showing any one interested the Machine in operation, who will call at the mill. I shall need four more as soon as the balance of our mill is completed. Yours truly,  
R. P. JOHNSON, Superintendent Rawhide Mill Company.

This Machine can be seen at H. J. Booth & Co's, Union Foundry, First street, corner of Mission. For further particulars, send for a Circular. Address,

J. HENDY.

402 Montgomery Street, San Francisco.

N. B.—The proprietor is prepared to furnish these Machines on thirty days trial, to responsible parties.  
26v13-1st&1st

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For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 6v12

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A. GENSOUL,

PUBLISHER, IMPORTER AND DEALER IN

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Books, Stationery, and Fancy Articles, 511 Montgomery street, between Commercial and Sacra mento, San Francisco.

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And all articles used by Engineers. Cheltenham Fire Clay Works, St. Louis,

PATENT METALLIC BURIAL CASKETS;

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193 California street, corner of Davis street.

18v13-3ml6p SAN FRANCISCO

### Foundry for Sale.

A One-half Interest in the

UNION IRON WORKS, SACRAMENTO,

Owned by William B. Williams, is offered for sale on the most favorable terms.

A Good Bargain

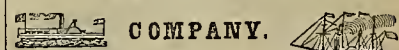
May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 35 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address

WILLIAM B. WILLIAMS, Sacramento, Cal.

26v13-19-19p

### California Steam Navigation



Steamer CAPITAL. CAPT. E. A. POOLE  
" GYPSOPOLIS. CAPT. A. FOSTER  
" YOSEMITE  
" CORNELIA. CAPT. W. BROMLEY.  
" JULIA. CAPT. E. CONKLIN.  
One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light draft steamers for Marysville, Colusa, Chico, and Red Bluff. Steamships AJAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.  
Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE, President.

13v12

### To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$50,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 635 Clay street, San Francisco. 23v13-6m



# Mining and Scientific Press.

Terms: One Year, \$5; Six Months, \$3.

Single Copies, Fifteen Cents.

A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JANUARY 12, 1867.

VOLUME XIV.  
Number 2.

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[Reported for the Mining and Scientific Press.

California Academy of Natural Sciences.

## ANNUAL MEETING.

SAN FRANCISCO, Jan. 7, 1867.

Mr. Stearns in the Chair. Thirty members present. Minutes of previous meeting read and approved.

Dr. J. B. Trask was elected a life member, and Dr. C. D. Cleveland and George S. Whitney were elected resident members.

Governor R. C. McCormick, of Arizona, and R. C. Jacobs, of Chihuahua, Mexico, were nominated for corresponding members.

Messrs. A. T. Mason, A. Sutro, H. C. Bidwell, J. W. Kidwell, and H. P. Carlton were nominated for resident membership.

The various officers and curators submitted their reports for the past year.

The report of Mr. Hubbard, the Treasurer, showed the receipts for 1866 to have been about \$1,000, and the expenditures nearly the same, with outstanding dues to the amount of \$200.

The Librarian reported many valuable additions to the Library, by foreign exchanges and subscriptions.

The Curators of Botany and Paleontology also reported additions to the Academy's collection in their respective departments.

The Publication Committee submitted their report through the Chairman, Prof. Whitney—the publications of the Academy for the past year were double the number of pages printed the previous year (1865).

The Academy then proceeded to the election of officers for the ensuing year, and the following gentlemen were elected:

President—Professor J. D. Whitney.  
Vice Presidents—Leander Ransom and Robert E. C. Stearns.

Treasurer—Samuel Hubbard.  
Recording Secretary—T. C. Bradley.  
Corresponding Secretary—W. B. Ewer.  
Librarian—Dr. A. Kellogg.

Curators—Of Mineralogy, W. S. Keyes; of Botany, Prof. H. N. Bolander; of Paleontology, W. M. Gabb; of Zoology, Eugene F. Loring; of Conchology, W. G. W. Harford; of Entomology, Dr. H. Behr.

Committee on Finance—Prof. J. D. Whitney, Samuel Hubbard, R. E. C. Stearns, William Ashburner.

Committee on Proceedings—W. S. Keyes, Prof. H. N. Bolander, P. Bosqui.

Dr. Behr exhibited a sample of coloring matter obtained from an insect of the cypselids species—one of the branchiopods—which is found floating in great abundance, like a thick scum, on the surface of a lake in Marin county, and probably elsewhere in California. The color is a bright scarlet, insoluble in water, and unaffected by light or warmth, but soluble in alcohol and oil. The doctor thought it might prove valuable as a dye stuff, and said it could be obtained in large quantities. Adjourned.

## STEWART'S NEW GRINDER AND AMALGAMATOR.

Among the recent new and promising inventions we have now to mention Mr. J. H. Stewart's hinged muller plate grinder and amalgamator, which the inventor informs us is already being adopted into successful use.

Our artist has furnished the accompanying engraving, which well illustrates the machine in a small compass. Its bottom is perfectly flat. Fig. 1 represents the general appearance of the pan. The revolving muller plate, E, in a five-foot pan, is made only six inches wide and three inches thick. On the under side of the muller plate are twelve grooves, each six inches long, three inches wide and two and a half inches deep. Into these grooves are placed the hinges represented on the center of the grinding shoe,

conc being thin enables the steam to have a more direct effect in heating the pulp.

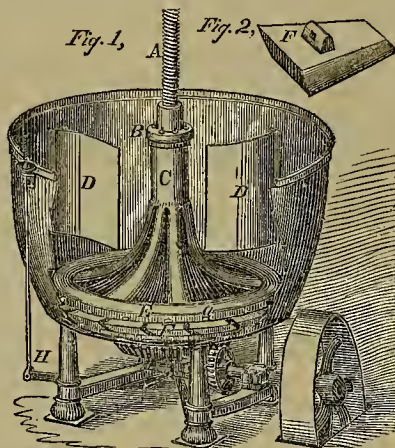
The inventor, who has had ten years' practical experience in quartz operations, says this pan will reduce ores cheaper and quicker than any other made. He claims the following among other advantages:

"1st. The muller plate being made small reduces the amount of power consumed in throwing the pulp, at least one-half.

"2d. The pulp has a much better opportunity to circulate and come fairly under the shoes, on account of the limited surface presented by the muller.

"3d. The shoes being attached by an adjustable hinge joint, midway of the shoes, the bottom wears down even with the dies also. This is an important accomplishment, attained in theory only by other pans, while this one does it in practice."

These pans are manufactured at the Miners' Foundry, First street, where Mr. Stewart's



STEWART'S NEW GRINDER AND AMALGAMATOR.

F, in Figs. 1 and 2. The groove being concave, and the hinge of the shoe convex, it is allowed to swing up and down, while it is rigidly held from swerving to the right or left. A small key, a, holds the shoe in place when the muller is raised. The shoes, F, are twelve in number, and are made fifteen and three-fourths inches in length by about twelve inches wide and two and a half inches thick at the outer edge, and one and a half inches thick at the heel or inner edge. The muller revolves from right to left, as you face the engraving. The upper part of the shoes project forward, so as to force the pulp down between the shoes and the dies. The flanges, D, are for the purpose of directing the pulp to the center. The lever, H, is used for the convenience of lifting the muller expeditiously from the dies whenever desirable.

The cone in the center is proportionally large, being two feet in diameter and eighteen inches high. This gives the space within the inner line of the grinding surface a larger radius than in most pans, obviating the cleaning up of a large portion of grinding surface, which, from its limited circle, is generally the least effective. The steam chest underneath the pan reaches from about the center of the shoes to the cone, which latter forms a part of the chest. The

art will take pleasure in showing miners and parties interested in machinery the chief principles of his invention, and furnishing further information.

EXERCISE.—Nothing is more invigorating to the constitution than judicious exercise of the muscles. The great cause of general debility, so prevalent among residents of crowded cities, is mainly due to a lack of proper exercise. The introduction of street cars has, doubtless, greatly added to complaints from this source, as thousands who were formerly in the habit of walking to and from their places of business, are now tempted, by cheap fare and convenient carriages, to ride; thereby neglecting one of the greatest promoters of health, in their accustomed walks. No person can enjoy health without exercise of some kind. Sedentary people who will ride, should accustom themselves to regular gymnastic exercise of some kind or other. All such in this city would do well to patronize the San Francisco Olympic Club.

THE PARIS EXPOSITION COMMITTEE.—A meeting of the California Committee in the Paris Exposition, will be held at their usual place of meeting 418 California street, at 3 o'clock P. M. to-day.

AUSTRALIAN GOLD—GREAT INCREASE OF YIELD.—The receipts of gold from Australia appear to be sensibly reviving. The receipts for September last were \$3,433,885, against \$1,192,780, for the corresponding period of the previous year. For the nine months ending with September 30th last, the value of the gold imported from Australia was \$23,196,855, as compared with \$10,776,160 in 1865, and \$12,108,310 in 1864. In this connection it may not be without interest to recapitulate the Australian yield of gold for the past eight years:

1858.....	\$45,323,815	1862.....	\$33,523,765
1859.....	48,122,830	1863.....	29,976,840
1860.....	33,595,000	1864.....	13,284,855
1861.....	31,658,125	1865.....	25,255,850

From present appearances, the total yield of 1866 will considerably exceed \$30,000,000; perhaps reach the yield of 1862—\$33,523,765. This large and unexpected increase for 1865 and 1866 is most remarkable in its occurrence, as well as important in its commercial import. We are not advised how or where this extraordinary increase is derived. The despondency which pervaded the public mind of Australia in 1864 is now happily removed, and the United Australian Colonies bid fair to again prove formidable rivals to California and its neighboring States and Territories in the yield of the precious metals.

CALIFORNIA OAKS FOR WINE CASKS.—Dr. G. B. Crane of St. Helena, Napa county, has made a nine thousand gallon cask from native oak grown on his place. We can assert on his authority, that as good oak for wine cask staves can be found in Napa Valley, as can be imported. Dr. Crane commenced his vineyard in 1859, and has made thirteen thousand gallons of wine this year.

A WRITER in the Times advises the concerted action of the public press in familiarizing the people of Nevada State with the necessity of changing their name to "Washoe." "To leave it to the Legislature," he says, "without such preparation, is to allow it to go by default." The name is not only a misnomer, the State not being particularly "snowy," but it leads to constant confusion in connection with the California county and city so named.

RED KEROSENE.—An article called "red kerosene" is being introduced into the Eastern market, under the specious pretence of its being an inexpensive product from petroleum. It is useless to say that it is merely a "dodge" of some oil speculator, by which to palm off a very inferior article at a higher price than a really better article of ordinary kerosene. The "red kerosene" is merely the ordinary article colored, for the purpose of carrying out the deception.

DIVIDENDS.—The following monthly dividends have been declared: Crown Point, \$100 per foot; Hale & Norcross, \$150 per share or \$100 per foot; Empire Mill and Mining Company, \$10 per share or \$160 per foot; and Imperial Silver Mining Company, \$8 per share. Crown Point carries over a balance of \$36,000 to next month.



## Communications.

IN THIS DEPARTMENT we invite the FREE discussion of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

(Written for the Mining and Scientific Press.)

## The Mines of Central Nevada.

BY J. D. EMERSLEY.

EDITORS PRESS:—In previous communications I gave a slight description of Hot Creek and Reveille districts, situated respectively ninety and one hundred and thirty miles southeast of Austin. Now that a toll road has been so far completed as to be fit for ordinary travel, Pahrnatag is brought within 200 miles of Austin—about half its distance from Salt Lake City. As stations are being built every fifteen or twenty miles between Smoky Valley and the promising town of Bancroft, located at the lower end of Hot Creek Cañon, travelers can make the journey, even in winter, without much inconvenience. It will be of great advantage to the mining interests of Pahrnatag that a series of natural passes suitable for a good road have been found and tracked out, so that a trading depot has been brought within easy access, and it is no less beneficial to the Austin merchants, who will only be too happy to furnish the supplies which may be required in all of that section of country. The Messrs. Raymond are now in Austin, and give very encouraging accounts of the Pahrnatag mines. Some of their ledges have been sunk upon to the depth of forty or fifty feet, and though occasional breaks and pinches have been met with, the ore, as a general thing, has increased in quantity and richness, with an increase of depth. The formation of Pahrnatag is similar to that of Hot Creek and Reveille districts, comprising feldspathic granite and porphyry, quartzite and talcose slate, with a surface cap of hydrocalcite or sedimentary lime stone of varying thickness. This, also, is the formation of Enreka, Diamond and Newark districts, seventy miles east of Austin, in the Hot Creek range of mountains, where some very valuable mines are now being opened and a 20-stamp mill erected.

The district, also, to which my present letter shall mainly relate, is similar in formation; so that the theory of certain wisemen, as to the unreliability of silver mines found in limestone, is practically disposed of.

The successful developments recently made in the limestone portion of Cortez district, are equally conclusive on this point, notwithstanding the fact, that a year ago, one of those mining soothsayers, who can see into the bowels of the earth, and foretell the future of a mine, if paid for it, declared that the district had not a single ledge which promised to become a valuable mine. Like a certain clothes-horse Colonel amongst us, who, having Silver Bend on the brain, when recently visiting Silver Creek and Reveille, could behold nothing but "bilks" and "wild cats," and was far-seeing enough to discover that mines were of little value before he had come within two miles of the mountains on which they were located. We rely on common sense and sound mining experience for an accurate estimate of the value of our mines in South Eastern Nevada, rather than upon the opinions of any mining experts whatsoever.

## DANVILLE DISTRICT.

In the second chain of mountains, east of the Toiyabe range, and about seventy miles southeast of Austin, is located the district of this name. It was discovered in July last by a party of prospectors, who, returning from a trip still farther to the east, were, in consequence of being short of provisions, making, as they supposed, a bee line for the nearest settlements. It is located on the eastern slope of the mountains, plentifully supplied with wood and water, and has within easy reach a large breadth of grass and agricultural land. The formation is feldspathic porphyry, silicious slate, quartzite and granite, capped by limestone, leaving an imperfect crystallization. The belt is little more than half a mile in width, with apparently five or six distinct veins running through it, on nearly a north and south course.

As far as can be ascertained, without work being done on the ledges, they seem to dip west at the surface, though probably they will pitch east, when the breaks likely to be encountered have been passed, in the sinking operations. The mineral is generally well diffused through the quartz, and the ore of the district, as a whole, is of a high grade, very little of it being of less value than \$100 per ton. Of the first discoveries, the Vanderbilt ledge is considered of greatest promise. This is about  $3\frac{1}{2}$  feet wide, and the ore is so uniform in quality, that it is needless to attempt to assort it. Two lots have been brought to Austin to be worked, as a test—one sample gave a pulp assay of over \$300 per ton, and the other over \$170. As it costs fifty dollars to haul the rock, and forty-five dollars to work it, the owners are disposed to wait till a mill is built in the district before they have any more of it milled. The Vanderbilt series of ledges consist of several parallel veins, all showing good mineral, and is, undoubtedly, a very valuable property. Another series, also of great value, includes the Vestal, Europa, California and Great Eastern. The ore in these ledges is an antimonic sulphuret, somewhat different in appearance from that of the Vanderbilt series, but probably superior to it in milling quality. Only a small amount of work has been done in the district, the deepest incline being little more than fifteen feet; but enough has been accomplished to prove that it contains quite a number of reliable mines, which, by means of well applied capital, will one day give a steady and highly profitable yield of silver bullion.

## WORKING TESTS.

Since I gave a description of Reveille district, two batches of its ore have been brought to Austin, and worked with most encouraging results. About 1,500 pounds from the Fisherman ledge gave a pulp assay of \$1,617 per ton, and another lot from the Crescent, intended to give a fair working test of the whole of a very wide ledge, yielded \$230 per ton.

## FOSSILIFEROUS DEVELOPMENTS.

It is also interesting to know that the fossils recently submitted to the California Academy of Natural Sciences, by Doctor Blatchley, and pronounced to belong to the lower silurian formation, came from the mining belt of Hot Creek district. If great age in a formation carrying veins of the precious metal is a desideratum, we certainly have it, with all its advantages, not only in the district named, but also in others, which exactly correspond with it in their geological features.

Austin, Nevada, Dec. 24, 1866.

(Written for the Mining and Scientific Press.)

## The American Silkworm.

MESSRS. EDITORS:—Over a year ago Prof. Verrill, of Yale College, published a short notice in the American Journal of Science, of a new American silkworm. This was copied into some of the California papers; but your readers may desire to know more about it.

The insect in question, the *Attacus Polyphemus* (Linn.) is a large and showy butterfly, the worm of which feeds on the leaves of several of our forest trees, especially of the maple, oak and willow. In their wild state they are not abundant at any one place; yet are not rare, and occur from Canada, throughout the Northern States, even to the Gulf of Mexico.

After numerous experiments and much patient labor, Mr. L. Trouvelot, of Medford, Mass., succeeded last year in successfully raising them in large numbers. From a few individuals, first caught, he increased his stock from year to year, until last year he had several wagon loads of cocoons. His method was to enclose the dense growth of scrub oak of those hills in netting, to protect the worms from birds; but this had the disadvantage that very many of the insects wound their cocoons in the dead leaves and dirt upon the ground, making the labor of collecting great. Moreover, a fire in the woods destroyed a considerable portion. He has since resorted to feeding, as with the common silkworm.

The cocoons are large, of a brown color, and generally rolled within a leaf. By a process of unwinding devised by Mr. Trouvelot, each cocoon yields about 1,500 yards, and 1,200 cocoons will make a pound of silk, which possesses great lustre and strength, and is pronounced by judges to be superior to all other silks manufactured, except the best Chinese. The quality and lustre is influenced, however, by the food. Just as he

seemed ready to realize handsomely for his labors, he has lately met with still another unlucky accident. On a recent visit to Massachusetts, I learned that he had lost most of his stock. This year he imported eggs of the Japanese silkworms, to compare the results of their culture with that of the natives. Upon these foreign insects, the disease which has proved so destructive to the silk interest in Europe, became developed, and after a time spread to the natives and destroyed them also. This disease is caused by a parasite fungus attacking the growing worm, and it is somewhat remarkable that it should have spread, as the American worms are not only very hardy, but are an entirely different species.

With most praiseworthy perseverance, Mr. T. proposes to begin anew again, and we trust he may succeed. He is an old practical silk grower from France, and has confidence in his ultimate success. Should it prove successful, there are large tracts in California, now valueless, that might be devoted to this interest. In the northern part of the State, especially in Shasta and Siskiyou counties, great areas of the mountain sides are covered with a low species of oak, that may ultimately be thus utilized; hence, we await with interest the success or failure of the enterprise here. Yours truly,

WM. H. BREWER.

YALE COLLEGE, NEW HAVEN, CONN., Nov. 30, 1866.

## PROCESS OF ROASTING ORES, ETC.

Translated from the German of F. Plattner, for the Mining and Gas-Light Journal, New York.

BY J. H. TIEMANN, M. E.

## NUMBER SIX.

10. Molybdanglanz (sulphuret of Molybdenum)  $\text{MoS}_2$ , by admission of air heated to a red heat and kept at this temperature, decomposes to sulphurous acid, which passes off as a gas and molybdic acid, which, provided the temperature was not high enough to smelt it, remain behind in needle-shaped crystals. These crystals, while hot, have a yellow color; but upon cooling are white; the single crystals are translucent. At too high a temperature, for which a bright red only is necessary, the acid smelts to a yellowish-brown liquid, and and evaporates more or less completely, as a white vapor. As a molybdic acid readily yields a part of its oxygen to reducing gases, when the temperature in roasting has been only a trifle too high, and the gases allowed to act on the substance, the oxyd only remains which is not volatile, and has a brownish color.

11. Glaserz (Silverglance)  $\text{Ag}_2\text{S}$  in the form of filings, or made artificially, in the form of a powder, when exposed on a clay saucer in an open muffel, to a heat not sufficient to cause it to sinter, much less to smelt, decomposes with evolution of sulphurous acid to metallic silver, having a dead (matt) appearance, and the particles not adhering together, it may be pulverized in an agate mortar, and has then a metallic luster. When the sulphuret of silver is in combination with such sulphurets, in small quantities, which have the property, when roasted in a reverberatory furnace, of forming sulphates which are decomposed at a higher temperature, and in such a manner that a part of the sulphuric acid escapes undecomposed, as in the sulphates of copper and zinc, it apparently acts upon the metallic silver formed, converting it into a sulphate of silver. (This will be again referred to further on.)

12. Arsenkies (Arsenical Pyrites)  $\text{FeS}_2 + \text{FeAs}$  when heated in the form of a powder, and the air admitted, gives off fumes of sulphuret of arsenic before it begins to glow; when it glows, which soon occurs on account of the oxydation, sulphurous and arsenious acids are generated; if the ore is stirred it glows brightly, increases in volume, and is apparently converted into sesquioxyd of iron, which, upon cooling, assumes a red color. When this product, however, is examined chemically, it is found to contain traces of sulphate and arseniate of iron; when exposed to a higher temperature, the sulphate only (vide pyrites and magnetic pyrites) is reduced to an oxyd, the arseniate remaining unchanged.

13. Arseucien Arseniate of Iron  $\text{Fe}^4\text{As}^3$  and  $\text{FeAs}$  at a dark red heat when pulverized and air admitted, soon begins to give off fumes of arsenic, glows gradually, becomes spongy, evolves a great deal of arsenious acid, and generally, in consequence of the presence of arsenical pyrites, some sulphurous acid. If the mass be allowed to cool after all the arsenious acid has been given off, it assumes a dark red color, and consists of oxyd of iron, with a large amount of arseniate of iron.

14. Kupfernickel (Copper Nickel)  $\text{Ni}^2\text{As}$  when exposed to a dark red heat on a clay saucer in an open muffel, changes to a voluminous delicate powder of basic arseniate of nickel, which, upon

cooling, has a yellowish-green color, arsenious acid and suboxyd of arsenic.

15. Spiekskobalt (Arsenical Cobalt and Nickel)  $(\text{Co Ni})\text{As}_2$  when finely pulverized and exposed on a clay saucer in an open muffel, to a gradually increasing red heat, is converted into basic arseniate acid and suboxyd of arsenic; when cool it has a reddish or yellowish green color, depending upon the quantity of nickel in the mixture.

16. Galena and metallic arsenic in equal quantities, (in the place of galena and sulphide of arsenic, which is sometimes roasted in the large way,) when intimately mixed and exposed to a dark red heat in the muffel, gives off sulphurous and arsenious acids, and not a small quantity of suboxyd of arsenic, and is converted into a black looking coherent mass, which is easily reduced to a powder. This mass, when cold, has a dark yellowish-gray color, and consists of arseniate and sulphate of lead. If a portion of this powder be heated to redness in a glass tube, open at both ends, it smelts and appears of a dark yellow on the edges, but upon cooling becomes opalescent and translucent.

17. Lichtes Rothgiltigertz (light Ruby Silver)  $3\text{AgS}, \text{AsS}_3$  in a powder, when gradually heated to a red heat in the open muffel, and stirred from time to time, is converted into a spongy, and partly granular mass, evolving at the same time sulphurous and arsenious acid and suboxyd of arsenic; on cooling the mass becomes brown, having metallic silver interspersed through it, in the shape of fine hairs. At a still higher temperature the mass remains unchanged, and consists principally of arseniate of silver. If, however, during the roasting, the ore be rubbed in an iron mortar from time to time, so that the parts which have become caked are thoroughly mixed with the partially roasted parts, no metallic silver is separated, the whole of the silver is converted into an arseniate, and at a higher temperature remains apparently unchanged.

18. Dunkles Rothgiltig (dark Ruby Silver)  $3\text{AgS}, \text{ShS}_3$  when roasted under the same conditions as No. 17, is converted into a caked mass, evolving at the same time sulphurous acid and tetroxyd of antimony (antimony acid,) which when cool has a brownish-gray color, and contains separated silver in fine hairs. If a part of this mass be rubbed up in an agate mortar and heated to a glow in an open glass tube, a small quantity of sulphurous and antimony acids are again driven off; the mass, when cool, has a light-brown or yellowish-gray color, and is free from metallic silver; at a middling red heat the mass remains unchanged, passing into metallic silver at a high temperature, and evolving white fumes of tetroxyd of antimony.

19. Fablerz (Gray Copper)  $4(\text{Cu}^2\text{S}, \text{FeS}, \text{ZnS})\text{SbS}_3$  when powdered and exposed to a dark red heat in an open muffel, evolves sulphurous and antimony acids before it comes to a glow; as the oxydation of the different parts increases it glows of itself, accompanied by a brisk evolution of sulphurous and antimony acids, showing a great inclination to sinter. If the caked ore be rubbed in a mortar, and again exposed to the heat, the appearance of fumes of antimony acid last but a short time, while the strong smell of sulphurous acid still continues. By continued roasting, and after being once or twice pulverized in the mortar, the ore loses the inclination to sinter, and the smell of sulphurous acid disappears, and on cooling it has a very dark yellowish-green color. If the roasted ore be treated with hydrochloric acid, a green solution is formed, in which may be detected the oxyds of copper, iron and zinc and sulphuric acid; and there remains a pale, reddish-yellow powder, which, when washed, dried and ignited, assumes a light yellowish-brown color, being about one-third of the roasted ore, consisting of oxyd of copper and antimony acid, apparently antimoniate of copper.

20. Galena  $\text{PbS}$  and Antimonglanz (Sulphide of Antimony)  $\text{ShS}_3$  thoroughly mixed in powder, when exposed to a dark red heat in the muffel, evolves sulphurous and antimony acids, and without sintering, is converted into a yellowish-gray mass, which appears to consist principally of antimoniate of lead, which, when examined chemically, however, is found to contain sulphuric acid as well.

[To be Continued.]

CEMENT FOR ROOFS.—M. Sorel of Paris uses a coating for walls which is said to be superior to pure gypsum. The oxyd of zinc is mixed with size, made up like a wash, and applied to a wall, ceiling, or wainscot. Afterward the chloride of zinc, made into a wash in the same way, is applied. The oxyd and chloride immediately combine and form a kind of cement, smooth and polished as glass, and possessing the advantages of oil paint, yet without any objectionable smell.



## Mechanical.

## Bridging Great Rivers.

The increase and concentration of travel, brought about by railroads, seems to have induced quite a passion—perhaps only a necessity—for bridging great rivers. It is only within a few years that the first project of bridging the Mississippi, or any of its larger tributaries, has been at all considered a matter of special need, or even thought feasible. The first bridge over the Ohio was completed only about a year ago at Steubenville. The second has just been completed at Cincinnati at a cost of \$1,750,000. A third is now in course of construction at Parkersburg, to connect the West Virginia and the Marietta and Cincinnati railroads; still another to connect the Baltimore and Ohio and Central Ohio railways, is urgently called for; while a fifth is projected at Louisville. In addition to those built and projected over the Ohio, its largest tributary, even the "Father of Waters" itself, will, in all probability, soon be spanned at Dubuque, Galena and Quincy, and very likely even as low down as St. Louis. Work has already been commenced on the one at Quincy. Verily, we live in a fast age, when people cannot wait to be ferried over even the largest streams; but must travel over them with railroad speed, at whatever cost or hazard. That this passion for bridging great streams is not altogether confined to the Yankees, is testified by the structures already completed over the Niagara, the St. Lawrence, and the Menai Straits in England.

But, perhaps, the most astonishing architectural effort of this description, is the bridge now in process of construction for the Imperial Mexican railway, between Vera Cruz and the city of Mexico. This structure is more properly a viaduct, and when completed, will span the Barrauca de Metlac, at the enormous height of *three hundred and eighty feet*, being nearly one hundred and fifty feet higher than any such structure ever before undertaken. Perhaps the best idea of this astonishing height may be obtained from the reflection that were it possible to place Bunker Hill Monument upon the top of the cupola of the Boston State House, their united elevation would scarcely touch the roadway stretched upon the magnificent arches of this wonderful structure. This bridge has been designed by French engineers, but being built of iron, in sections, in England, from whence it will be transported to Vera Cruz, and placed in position as soon as the rails have been laid down to that point.

**PURITY OF METALS.**—Many persons labor under the wrong impression that chemical purity is an essential condition for strength in metals. Gold has to be alloyed with copper and silver to make it more adapted for the arts and commerce. Zinc, when quite pure, cannot be rolled into sheets, but when mixed with a small percentage of lead, it becomes very ductile. The presence of lead prevents it from assuming a crystalline structure. The characteristic sign of purity is the power of crystallization; the purer the metal, the less its cohesive strength.

**COLD AND HOT-BLAST IRON.**—The relative power of these two descriptions of iron for resisting impact, is as follows: The mean ratio of strength in cold-blast iron being 1,000, hot-blast iron is represented by 1,024; and the main ratio of power to sustain impact being in cold-blast as 1,000, it was 1,226 in hot-blast iron. These were the results of an inquiry established by the British Association.

**A STEAM CARRIAGE** for towing boats and barges on rivers and canals, has recently been introduced in France, on the river Olse, and was found to answer perfectly. Running on the towing paths, it makes ascents and descents, and is said to turn as easily as a horse.

## Interesting Experiments with the Famous "Harrison" Boiler.

On Saturday, November 17th, a committee of scientific gentlemen, connected with the Franklin Institute, paid a visit to the Steam Boiler Works of Joseph Harrison, Jr., situated on Gray's Ferry road, near the U. S. Arsenal, Philadelphia, for the purpose of witnessing some interesting experiments with the celebrated boiler that is manufactured at those works, which experiments are described as follows in the *American Artisan*:

These experiments were part of a series under investigation at present, and they were enhanced in interest from the fact that the boiler operated on was heated nearly red-hot, and cold water was then immediately forced into it, which action, with ordinary boilers, would produce instant explosion, but, on the occasion mentioned, was done with perfect safety, and without the slightest injury to the boiler.

When these experiments commenced, the boiler had steam up, and it was blowing off violently, with a pressure of one hundred pounds to the square inch; the blow-off cock attached to the boiler was then opened wide, blowing all the contents out in the space of two minutes. After all the water and steam had escaped, and the pressure had fallen to zero, the blow-off cock was closed and the pump started, injecting cold water into the now greatly-heated boiler, for the fires were burning very brightly under the same.

As soon as the cold water began to enter the heated boiler the steam gradually rose until the water was thought to reach the top of the bridge wall, when, coming in contact with the still more highly-heated portion of the boiler, the pressure rose to 100 pounds almost instantly, at which time the safety-valve began blowing off violently.

As the water rose, and had nearly reached the gauge-cock, a joint opened in the boiler, permitting a free escape of water. This leak stopped itself in less than one minute, and two other leaks in succession started and closed as in the first case, and when the water had reached the second gauge-cock, the boiler was perfectly tight, with steam blowing off at 110 pounds at the safety-valve; the fires being very bright and active, and all the conditions such as would indicate a good boiler in perfect running order were apparent.

The entire experiment occupied seventeen minutes' time, and gave the greatest satisfaction. This was the third trial of the same boiler under similar circumstances, and its result indicates a new era in the construction of steam boilers.

**TWIST DRILLS.**—The use of twist drills in place of flat bids fair to become general. They cut more easily, and with greater accuracy. The flat drill will not always bore a hole which is perfectly cylindrical. The *American Artisan* suggests the adoption of the decimal system in the sizing of drills—that is, that they be made to increase by tenths and hundredths of an inch, instead of eighths, sixteenths, etc.

**TEST FOR STEEL RAILS.**—In the steel rail mills, at the "Cyclops" Steel Works, Sheffield, a mass of iron, weighing one ton, is dropped from a height of 36½ feet upon the middle of the rail, placed upon three-foot supports, as a test of its strength. The rails rarely break, but occasionally bend, under this tremendous trial.

**STEEL RAILS IN BOSTON.**—The Boston Traveller learns that the Boston and Providence Railroad have lately laid three or four miles of steel rails on their road beyond Roxbury, and the officers think they are a great improvement on iron rails.

**COST OF RAILWAYS.**—The proportionate cost of railways, in round numbers, taking the United States as 1, is Germany 2, France 3, and England 4.

**CANDLES.**—The first improvement in the material used for candles dates as far back as 1799, when a person named Wm. Bolts took out a patent, by which he proposed to squeeze the tallow after melting, and while in the act of cooling from the melted state.

**WHAT THEY ARE.**—Agriculture and manufactures are the building materials, the mortar and stone used by intelligence to shelter a nation's wealth and prosperity.

An English patent has been taken out for a process of manufacturing picture-frames, moldings, furniture decorations, fronts for stores, etc., from compressed peat.

## Scientific Miscellany.

**PREPARATION OF OXYGEN.**—A new process has been patented in France for obtaining a supply of oxygen gas from common air by means of highly oxygenated compounds, such as chromates and bi-chromates, manganates and per-manganates, which, if deprived of a portion of their oxygen by means of steam, have the power of absorbing oxygen again when exposed to a current of dry, heated air. The improvement consists in making the action continuous, by placing in a retort one of the compounds mentioned, and passing into the retort a current of steam. A current of oxygen is carried off and collected in a gas-holder, while the steam is condensed to water. When oxygen has ceased to be eliminated, a current of dry, heated air is forced into the retort. The compound absorbs a portion of oxygen, and is again ready for the action of steam. Thus by the alternate action of air and steam, the same compound produces oxygen for an unlimited period. The process is said to work with great regularity, and may yet be of considerable importance in metallurgy.—*Exchange.*

We have little faith in the probability of an utilization of the above process to any extent; but if some means could be devised by which the oxygen of the air could be so readily and cheaply separated from its nitrogen as to be made available upon a large scale—for supporting combustion, for instance—we might then, indeed, look for a revolution in metallurgy, and, in fact, in almost every industrial pursuit. The perplexing question which is now agitating the English public, as to what shall be done when their coal gives out, would then be practically answered.

An ordinary blast-furnace making white iron requires nearly 7,500 cubic feet of air per minute, or, in other words, it consumes about *fourteen tons* of atmosphere every hour. In consuming this fourteen tons of atmosphere, the coal employed must raise from the ordinary atmospheric temperature to about 5,000 degrees of heat, *ten tons* of nitrogen, which is perfectly useless to the smelter, except as a medium through which he obtains his oxygen. Now, if some plan could be devised by which the *four tons* of oxygen could be separated from their ten tons of nitrogen, and thus applied direct to the furnace, charged with the proper quantity of coal, we should then have a degree of heat in ordinary furnace operations surpassed only by that obtained by the compound blow-pipe, and at a trifling amount of cost, apart from that of the separation of the oxygen from its nitrogen. The time occupied in the various processes of smelting, for instance, would also be reduced to that of a mere fraction of that now required.

**THE MANUFACTURE OF IRON WITH ANTHRACITE,** is attracting considerable attention in England at the present time. There has heretofore been much prejudice against its use there; but it is now stated that Mr. Samuel Blackwell, of South Wales, has devised a furnace for its use, which combines more economy and efficiency than any furnace heretofore employed in Pennsylvania or elsewhere. After several weeks' trial with his new furnace, he reports the production of one ton of iron to each 18 ewt. of coal. This, we believe, is the greatest economy which has yet been obtained in producing iron with anthracite fuel. Anthracite iron is particularly desirable, from the fact that it is said to possess properties which render it peculiarly valuable for being converted into steel.

**OZONE.**—Mr. G. Plante, in a note to the French Academy, states that fifty per cent. more ozone is produced in the electrolysis of water, when the poles are of lead, than when they are made of platinum. He conjectures the increase is the result of the secondary action of a layer of oxyd on the electrode.

**RELEUDINE.**—Hesse has discovered a new alkaloid in the red poppy; it is also found in good opium. It is soluble in water, alcohol and ether, and crystallizes from the last in white prisms.

**NATIVE LEAD ASSOCIATED WITH GOLD.** Some interesting discoveries of native lead, associated with gold and oxyd of iron, are said to have recently been made in the gold-bearing drift found under the basalt, in Victoria, Australia. It is also met with in the neighboring galena-bearing veins. Specimens are found in nearly all the "wash-dirt" about Mount Greenock and at Aorea. A large number of these specimens have been sent to London, where they are exciting much interest. A paper, upon this occurrence, will be presented at the next meeting of the Geological Society. Native copper, accompanied with gold and silver, is found in the copper mines of Butte county, in this State; but we are not aware that lead has been found associated with gold anywhere on the Pacific coast.

**OSMOTIC PROCESS FOR SEPARATING SUGAR.** A method of separating the beet sugar from the molasses has been recently adopted in France, which is based upon the principle of *osmose*. This word is the one used to express the tendency exhibited by liquids of different densities to seek each other through the pores of a separating membrane. The flow is generally from the least to the most dense, and is in fact a form of capillary attraction, the pores of the membrane being in reality tubes, of a length equal to the thickness of the membrane. In the case under notice, the membrane used is paper parchment. Water is passed upward, and the molasses downward, on opposite sides of the membrane.

**COPPER SMOKE.**—It is reported that the Messrs. Vivcan & Sons still continue to be eminently successful in the application of their new arrangement for the combustion of the sulphur sublimed from copper ores, and its utilization by conversion into sulphuric acid. The saving in the manufacture of copper, by the production of a valuable merchantable commodity from a hitherto wasted material, is very great; to say nothing of the great nuisance of "copper smoke," which works such destruction in the immediate neighborhood of copper works which do not consume their smoke.

**THE HARDNESS OF SILVER.**—M. Mathey, assayer at Locia, has shown that the hardness of which carvers in silver sometimes complain is not owing to the presence of tin, lead, or any other metal, but is solely due to the high temperature at which the silver is cast. By letting the crucible cool, until a slight solid crust is formed on the surface of the fused metal, and casting at that moment, a soft silver with a brilliant cut is obtained.

**SILICA IN CORN-STALKS.**—M. Pierre, in a memoir to the French Academy of Sciences, says some people have supposed that corn becomes laid because of the weakness of the stalk from the absence of silica, but chemical analysis does not show a deficiency of silica. Observing that corn on poor land was rarely laid, he concludes that the stalks in general give way in consequence of an over-development of leaves.

**A NEW TEST FOR IODINE.**—M. Cury Lea, of Philadelphia, has successfully used chromates in bringing about the starch reaction in the presence of iodine in extremely small quantities. For instance, in a solution of iodide of potassium, so dilute that the addition of nitric acid or starch produces no perceptible effect, by the further addition of a single drop of a dilute solution of the bi-chromate of potash, instantly produces the well known change of color.

**FINE COLORING MATTERS,** soluble in fatty matters, paraffine and similar hydrocarbons, and capable, by mixture, of producing any number of intermediate shades, have been discovered in the form of metallic soaps. They are obtained by precipitating various metallic solutions with soda soap. In this way the salts of iron afford a brown orange stearate; those of copper, a malachite green; those of nickel, an emerald green; those of chromium, a green which changes to violet; those of uranium, a bright yellow; those of cobalt, a lilac; and those of manganese, a rose red.



## NEW PATENTS AND INVENTIONS.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**NOVEL GRATE BAR ARRANGEMENTS.**—The Messrs. Vicar, of England, have recently invented a furnace improvement, wherein a backward and forward motion is given to the grate bars. By this motion, a progressive movement is given to the fuel, from the front to the back or bridge of the furnace. This is effected by moving the bars in a mass towards the bridge, and bringing them back again. The bars have a travel of about three inches per stroke, and make a stroke in about four minutes, which causes the fuel to travel about three feet per hour. The rate of travel is adapted to the work to be done. When the furnace is very wide, instead of moving the bars forward together, they move each side of the furnace or half the bars alternately. The action of the furnace is the same as Jukes', but obtained by much simpler means, rendering it applicable to any class of boiler, whether fired internally or externally, as, instead of the endless chain used in Jukes', there is only a plain bar within the furnace. The mechanism, too, for imparting motion is of a very simple kind, and is not exposed to any heat that can injure it.

## PATENTS RECENTLY ISSUED.

**VACUUM VENTILATOR.**—J. W. Foard, San Francisco, Cal.: I claim an apparatus for raising fluid, gaseous or liquid, by means of natural or artificial currents of air, composed of horizontal tubes or pipes, which are supported by means of a collar, upon a vertical pipe, so as to be free to revolve thereon, and which are guided and maintained in proper position by means of a supplementary pipe, that extends from the first mentioned pipe, into said vertical pipe, substantially as described.

**PATENT SAFETY SHOE.**—J. Wyatt Reid of New York, has recently taken out a patent for a "safety shoe," in connection with car brakes. This shoe consists simply of a short bar of iron attached to the brakes, and reaching to within an inch of the rail. Its action is such that in case a man should fall before the wheel of the car, he is pushed aside, either between or outside the rails, and cannot by any possibility be run over. It is one of those "happy thoughts," which are at the same time so simple, that we always wonder that it has never been thought of before.

**FIRE-PROOF FELT FOR ROOFING AND OTHER PURPOSES.**—Moses A. Johnson, Lowell, Mass.: I claim a felted fabric of hair or other material, covered on one or both of its sides with paper and with silicate of soda or soluble glass, and whether painted or otherwise, rendered water-proof or not, as herein described.

**MAKING BUTTER FROM CHEESE-WHEY.**—Homer C. Markham and Charles G. Riggs, West Furen, N. Y., claims the separation of cream or butter from wheys by the means of heat and in the use of an acid liquid, substantially as described.

**WELDING OF IRON AND STEEL.**—John P. Price, Philadelphia, Pa., claims the welding of iron or steel by the aid of kryolite, as set forth.

[Kryolite is a mineral of a semi-vitreous appearance, varying from a glassy to a grayish white. It is a fluorid of sodium and aluminum, fusible in the flame of a candle. Its composition is as follows: Aluminum, 13.0; sodium, 32.8; fluorine, 54.2.]

**CHINESE QUARTZ MINERS.**—"Dan de Quille," in a letter from Downieville to the Virginia Enterprise, thus discourseth of the Gold Valley Quartz Mill: "The company go it strong on cheap plans and Chinamen. They have a Chinaman feeding the batteries, two Chinamen in the mine, a Chinese cook, and I don't know how many other Chinese employees. \* \* I would like to be superintendent of that mine awhile. There would soon be seen a train of Chinamen winding down toward the foot-hills."

**WARM.**—In the 900-foot level of the Belcher mine, says the Cold Hill News, it is no unusual thing to see the perspiration running out of the miners' boots. It is so warm and oppressive that men can work but a few minutes at a time without resting. This is the deepest work on the Comstock ledge, and air is supplied by machinery.

## WEEKLY STOCK CIRCULAR

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING, }  
January 12, 1867.

## CITY STOCKS.

Spring Valley Water was active during the past week, a large amount selling at 61 @ 60%. San Francisco sold at 65 @ 64%, and California Steam Navigation at 63 1/2 @ 65 1/2 % cent. Most of the local insurance companies have already announced their dividends for the quarter closing with December—Pacific, 6 % cent.; Occidental, 4 1/2, Union, 6; National, 3; and Fireman's Fund, 4 1/2. The stockholders of the Pacific Insurance Company will assemble on the 11th of February, to consider the proposition to increase the capital stock from \$750,000 to \$1,000,000, and the shares from 7,500 to 10,000.

## MINING SHARE MARKET.

The share market has been characterized by a good degree of activity during the past week, influenced, to some extent, by the dividends disbursed and yet to be paid by the several companies. It will be noticed that some of the claims exhibit large gains in the bullion returns over previous receipts, with promising indications of a continuance; however, the yield of the Comstock Lode during the year 1866 is estimated at \$500,000 less than in 1865—say \$14,500,000. The total yield of this great vein, from the time operations were first commenced to the close of 1866, is placed at over \$60,000,000.

We present below a very interesting tabular statement relative to the product of bullion and dividends paid by the most prominent mines on the Comstock Lode during the year 1866, together with all the assessments levied during the same period by the various companies, of which public announcement had been made:

COMPANY.	Bullion Product.	Dividends.	Assessments.
Alpha .....	.....	.....	\$144,559
Bacon & Co. ....	.....	.....	15,000
Baltimore American .....	.....	.....	13,000
Belcher .....	.....	.....	143,520
Bullion .....	\$848,750	.....	175,000
Chollar .....	303,931	.....	.....
Confidence .....	.....	.....	78,000
Crown Point .....	1,313,357	\$234,000	.....
Danely .....	.....	.....	26,000
Empire Mill & W. Co. ....	456,775	32,400	.....
Eschschuer .....	.....	.....	32,000
Gould & Curry .....	1,605,228	232,000	.....
Hale & Norcross .....	1,189,768	324,000	.....
Imperial .....	910,187	175,000	.....
Lady Bryan .....	.....	.....	15,000
Ophir .....	450,000	.....	184,800
Overman .....	27,933	.....	25,000
Savage .....	1,835,800	267,000	.....
Sierra Nevada .....	.....	.....	55,510
Yellow Jacket .....	2,310,000	300,000	180,000
Totals .....	\$11,261,741	\$1,794,400	\$1,272,780

**HALE & NORCROSS**—still continues out of the market; \$2,800 has been bid and \$3,500 asked. This claim is in a very flourishing condition. From the 65 per cent. assay value of 2,765 tons of ore obtained from the mills during the month of December last the yield was \$144,348.35 in bullion. At a meeting of the Board of Trustees held on the 9th inst., a dividend of \$100 per foot was declared out of the net earnings in December. At the same session, the following preamble and resolution were passed: "Whereas, a tunnel has been projected, the object of which is to strike the Comstock Lode, in the State of Nevada, at a depth of 1,800 or 2,000 feet below the surface, for the purpose of draining said lode, and to furnish better facilities to the companies located thereon to work their respective claims; Resolved, that authority is hereby granted to the Board of Trustees of the Hale & Norcross Company to subscribe or advance such sum or sums of money, not to exceed in the aggregate the sum of \$100,000 towards the completion of said tunnel, as in their judgment they may deem best for the interests of this company."

**SAVAGE**—sold to a limited extent during the past week at \$2,140 @ 2,100, then at \$1,950, seller 30 (ex-dividend) closing at \$1,960 s 60. During the month of December the bullion returns amounted to \$214,847.39, and out of the net earnings during the same period, a dividend of \$100 per foot was paid to the stockholders on the 9th inst. This company carried forward at the close of December 5,100 tons of ore valued at \$180,468.79. For the week ending the 5th inst., the approximate value of 720 tons of ore extracted from the mine, aggregated \$26,961—equal to \$37.44 per ton. The largest amount—270 tons—came from the two stations in the Curtis shaft. Work had been suspended for four days during the week under review, on account of the impossibility to carry the ore away from the dumps. The body of ore between the 4th and 5th stations, discovered about a month

ago, promises to yield a considerable amount of first-class ore. The drifts from the Curtis shaft and from the old shaft, on the 7th station, have been connected; however, nothing has been done towards extracting ore in any quantity from this station. The north winze on the 7th station is down thirty feet, and it is said in good ore. Water has been somewhat troublesome at this point. The south winze is fifty feet in depth, and at thirty feet ore was reached, which now extends over the whole winze.

**CROWN POINT**—advanced materially under the favorable bullion returns for December, opening at \$1,250, steadily improving to \$1,400, seller 30, and at the close sold at \$1,400. This company received in bullion during the month of December \$184,854, an average of about \$45 per ton; in November, \$91,326. They pay a dividend of \$100 per foot on the 15th inst., leaving a surplus in the treasury of \$36,000. During the week ending January 4th, 1,087 tons of ore were taken from the mine.

**YELLOW JACKET**—exhibited considerable activity, selling early in the week at \$1,350, receding to \$1,225, rallying to \$1,280, and closing at \$1,330. We estimate the yield of bullion in December to be about \$160,000; previous month, \$202,000. A dividend of \$50 per foot will be disbursed to shareholders on the 15th instant. A dispatch at the office in this city reads—" \$50 with a surplus."

**GOULD & CURRY**—is little inquired for, realizing \$645 @ 620, then \$625 and \$650, buyer 5, and at the close \$615 is bid. The amount stated in the above table—\$1,605,228—represents the actual bullion receipts at the office in this city.

We refer our readers to the following interesting statement furnished us by the obliging Secretary of the company:

Ore and Bullion product of the Gould and Curry Mine from the date of its incorporation, (June 27, 1850) to November 30, 1866:

Dates.	Ore Worked etc.—Tons.	Bullion, Etc.	Av. Yld Per Ton.	Dividends Paid.
1850	.....	.....	.....	.....
July 1	Dec 13	140%	\$22,004 82	\$156 60
1850	Dec 13	.....	.....	.....
Dec 14	Dec 13	300	44,221 41	147 40
1851	Dec 13	.....	.....	.....
Dec 14	Nov 30	8,442%	842,658 80	99 80
1852	Dec 13	.....	.....	.....
Dec 1	Nov 30	48,746	3,902,712 64	80 07
1853	Dec 13	.....	.....	.....
Dec 1	Nov 30	66,477%	4,798,124 90	72 18
1854	Dec 13	.....	.....	.....
Dec 1	Nov 30	46,022%	2,026,172 57	44 02
1855	Dec 13	.....	.....	.....
Dec 1	Nov 30	60,417%	1,000,922 25	28 00
Total .....	.....	.....	\$13,326,727 39	.....
From Tailings .....	.....	.....	300,143 76	.....
Worked—Tons .....	230,546	\$13,626,871 15	\$59 02	\$3,778,500
On hand, Dec. 1 .....	.....	.....	.....	.....
1856—Tons .....	4,249%	.....	.....	.....
Total Product .....	234,795%	.....	.....	.....

**IMPERIAL**—rose from 130 to \$140, and closed yesterday at \$145. In the month of December, \$81,045.67 in bullion was received at the office in this city. On the 7th instant a dividend of \$8 per share will be paid to the stockholders of this company. On the 1st instant 3,712 tons of ore were on hand at the Rock Point mill—which is again working at full capacity—and at the dump of the mine 900 tons.

**EMPIRE**—has been inactive during the past week, selling at \$195, and closed yesterday at \$180. This company is in a very prosperous condition, and its mine is now perhaps in a more productive state than at any former period of its history. A dividend of \$10 per share is payable to-day.

**CHOLLAR-POROSS**—met with marked activity during the past week, some 700 shares changing hands, opening at \$217.50, improving to \$245, receding to \$228, and closing at \$242. The ore recently discovered in the first station main drift north, is now said to be three feet wide, and may be considered worth from \$35 to \$40 per ton. This deposit is 70 feet above the point where the Hale & Norcross company drifted over on the Chollar ground.

**OPHIR**—was quiet, selling at \$155, then at \$160 @ 157.50, and closed yesterday at \$154. Nothing of special interest from this mine. Work on the south drift from main shaft, on the 10th level, advances about two feet per day.

**CONFIDENCE**—improved from \$65 to \$75, then receded to \$50, and closed at \$60. During the month of December the bullion returns amounted to \$25,978.12. **BELOHER** improved from \$142.50 to \$180, closing at \$158. An assessment of \$15 per share was levied on the 1st instant.

**BULLION**—opened at \$36, advanced to \$44, receded to \$28, and closed yesterday at \$33.

**OVERMAN** fluctuated between \$16 and \$17.75—assessment of \$10 delinquent to-day.

**SIERRA NEVADA** sold from \$3.25 to \$5, then at \$2.50—assessment of \$4 delinquent.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$762,116.75.

## A Word to Readers in the Atlantic States.

Much complaint has reached us, through various sources, at the general lack of knowledge at the East, with regard to mining and other operations on this coast, and the frequent impositions practiced upon the public there, in consequence, by irresponsible persons passing off upon unsuspecting victims worthless mining stock, or persuading them, by false representations, to organize companies and advance moneys upon worthless ground, or ground which oftentimes has neither value or locality. If our friends at the East, who are still anxious to engage in the laudable venture of mining enterprise, would do so intelligently, let them subscribe for and carefully consult the only journal on the Pacific coast where every mining enterprise that is worth naming is, from time to time, noticed, as its merits may warrant. A mining enterprise on the Pacific coast, which is not referred to in this journal, in some way or other, as often as once in three or four months, is certainly one which people in the Atlantic States should beware of. Our advice to people at the East is never to venture small amounts in mining. If you must start small, let a number of such club together, so as to make the aggregate amount to be invested, such as may be worth your while to inquire into. Jan. 1, 1867.

It is a singular fact that the man who has been the most liberal to the poor of London is not an Englishman, but an American; and the man who proposes to spend \$5,000,000 for the poor of New York is not an American, but a Scotchman. They obtained their riches, however, in the cities they would benefit.

**PETROLEUM IN CALIFORNIA.**—The fact that the Petroleum oil belt in California extends from Humboldt county on the north, to Los Angeles on the south—a distance of seven hundred miles—is mentioned in the late report of the Register of the Land Office, together with other facts in proof of our great resources in this respect.

**DURING the Madoc (Canada) gold excitement,** one man offered, it is said, \$2,000 for the privilege of working the hole with a hoe for twenty-four hours.

**General Butler, Ben. Holladay, and others,** are interested in the company which is to colonize a portion of Lower California.

**PACIFIC HYGIENIC HOME WATER CURE,** at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated), B. J. SMITH, M. D., Consulting Physician; R. S. MACINTYRE, M. D., Attending Physician; W. G. W. HARFORD, Manager; J. ANDREWS, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-tr

**OLNEY & Co.,** Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. 16v13

**NATURAL CURIOSITIES FOR CHRISTMAS.**—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shell and Wax Flowers, besides Feathers, Birds and Butterflies, for ladies' hats, Shields, Sea-weeds, etc. 24v13-qr

**Air Pump for Sale.**—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN KOENIG, mathematical instrument maker, 522 Montgomery street. 24v13-qr

## To Owners of Mineral Cabinets.

A miner in Nevada has a lot of choice Crystals, which he desires to dispose of at reasonable rates to parties who may desire to complete their display of minerals. Address the office of the "Mining and Scientific Press." 24v13-qr

## Consumption Cured.

**FULTON, Hamilton Co., Ohio, May 19, 1863—Gents:** This is to certify that my daughter was taken with a severe cold, which settled upon her lungs, attended with violent coughing. The cough became incessant and distressing, with pain and great difficulty of breathing. It went on until she was almost dead, when she was taken to the hospital, where she was examined by a physician, who said that she could not be cured, as she had the last stages of consumption. At this time she was induced to try ALLEN'S LUNG BALM, having heard of its many remarkable cures. On using the Balm, it seemed to go to the very seat of the disease at once, as it caused her to expectorate large quantities of phlegm. The cough began to mend; the soreness of the lungs was relieved; the strength and appetite returned. By the use of only three bottles, she, to all appearances, had recovered her health, and now feels as well as ever. Respectfully, yours, LUCIUS PECK.

Sold by all Medicine dealers every where. 14v14-lu



## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

## Monday, January 7.

48 shs Ophir at 160 per foot.
21 shs Ophir at 157½ per foot.
10 shs Chollar-Potosi at 225 per foot.
10 shs Chollar-Potosi at 230 per foot.
5 shs Chollar-Potosi at 230 per foot, b 10.
40 shs Chollar-Potosi at 220 per foot.
25 shs Chollar-Potosi at 221 per foot.
10 shs Confidence at 70 per share, s 30.
5 shs Confidence at 74 per share, s 30.
10 shs Confidence at 75 per share.
10 shs Confidence at 75 per share b 30.
40 shs Overman at 16 per share.
15 shs Overman at 16½ per foot.
8 shs Gould & Curry at 615 per foot.
4 shs Gould & Curry at 630 per foot.
4 shs Gould & Curry at 605 per foot.
2 shs Cal Steam Nav Co at 63½ per cent.
1 shs Bullion at 33½ per share.
70 shs Bullion at 33½ per share.
5 shs Bullion at 31 per share, s 30.
5 shs Bullion at 33 per share.
5 shs Bullion at 36 per share b 30.
2 shs Yellow Jacket at 1235 per foot a 5.
15 shs Belcher at 140 per foot.
15 shs Belcher at 143 per foot.
2 shs Savage at 2140 per foot.
1 shs Savage at 2135 per foot.
2 shs Savage at 2125 per foot, a 30.
2 shs Savage at 2105 per foot, s 30.
29 shs Sierra Nevada at 3½ per share.
4 shs Crown Point at 1250 per foot.

## AFTERNOON SESSION.

20 shs Overman at 16½ per share.
10 shs Overman at 16½ per share.
10 shs Overman at 18 per share b 30.
7 shs Cal Steam Nav Co at 63½ per cent.
5 shs Cal Steam Nav Co at 64 per ct.
5 shs Confidence at 70 per share s 30.
5 shs Confidence at 72 per share, s 30.
10 shs Confidence at 75 per share, b 30.
48 shs Ophir at 160 per foot.
4 shs Gould & Curry at 620 per foot.
20 shs Sierra Nevada at 4 per share.
15 shs Sierra Nevada at 4½ per share.
15 shs Sierra Nevada at 5 per share.
29 shs Chollar-Potosi at 220/225 per foot.
20 shs Chollar-Potosi at 225/225 per foot.
70 shs Bullion at 37/37 per share b 30.
42 shs Bullion at 34/35 per share.
15 shs Bullion at 33/34 per shares 30.
10 shs Bullion at 35 per foot, s 30.
21 shs Bullion at 35 per share.
5 shs Bullion at 34 per share, b 30.
1 shs Savage at 2100 per foot, b 10.
1 shs Savage at 2100 per foot.
1 shs Yellow Jacket at 1390 per foot.
Amount of sales.....\$100,315 00

## Tuesday, January 8.

100 shs Sierra Nevada at 4½ per share.
10 shs Overman at 18 per share.
5 shs Overman at 18½ per share.
10 shs Overman at 18 per share, a 10.
5 shs Overman at 18 per share, s 30.
15 shs Overman at 19 per share, b 30.
10 shs Overman at 17½ per share.
92 shs Bullion at 33/44 per share.
5 shs Bullion at 40 per foot s 30.
92 shs Bullion at 38/44 per share.
5 shs Bullion, nt 40 per share, s 30.
60 shs Bullion at 42/47 per share b 30.
15 shs Bullion at 41/40 per share.
4 shs Crown Point at 1310 per foot.
4 shs Crown Point at 1310 per foot.
10 shs Imperial at 133 per share.
13 shs Imperial at 135 per share.
10 shs Confidence at 67½ per share, s 30.
5 shs Confidence at 70 per foot, b 30.
15 shs Confidence at 75 per share.
15 shs Chollar-Potosi at 240 pr foot.
10 shs Chollar-Potosi at 245 per foot.
38 shs Chollar-Potosi at 245/235 per foot.
18 shs Chollar-Potosi at 235/239 per share.
3 shs Chollar-Potosi at 240 per ft b 10.
20 shs Chollar-Potosi at 245 per foot, b 30.
15 shs Chollar-Potosi at 210 per foot b 5.
2 shs Savage at 2100 per foot.
1 shs Savage at 2080 per foot s 30.
1 shs Savage at 2090 per foot, s 30.
1 shs Savage at 2105 per foot.
1 shs Savage at 2100 per foot.
1 shs Yellow Jacket at 1300 per foot b 5.
6 shs Yellow Jacket at 1300 per foot.
6 shs Yellow Jacket at 1310 per foot.
5 shs Yellow Jacket at 1320 per foot b 5.
3 shs Yellow Jacket at 1310 per foot.
3 shs Yellow Jacket at 1320 per foot.
2 shs Belcher at 150 per foot.
2 shs Belcher at 150 per foot.
1 shs Cal Steam Nav Co at 64½ per cent.
\$5,000 Legal Tender Notes at 74c, s 30.
\$10,000 Legal Tender Notes at 74c.

## AFTERNOON SESSION.

20 shs Chollar-Potosi at 240 per foot.
22 shs Chollar-Potosi at 242½ per foot.
10 shs Chollar-Potosi at 240 per share s 30.
15 shs Chollar-Potosi at 246 per share, b 30.
15 shs Chollar-Potosi at 250 per share b 30.
1 shs Chollar-Potosi at 245 per foot b 10.
11 shs Chollar-Potosi at 243/241 per foot.
13 shs Chollar-Potosi at 243 per foot.
10 shs Yellow Jacket at 1210 per foot.
10 shs Yellow Jacket at 1225 per foot.
1 shs Yellow Jacket at 1232½ per foot, a 10.
1 shs Yellow Jacket at 1230 per foot s 10.
6 shs Yellow Jacket at 1225 per foot.
5 shs Yellow Jacket at 1230 per foot.
2 shs Yellow Jacket at 1230 per foot, s 5.
1 shs Yellow Jacket at 1235 per foot b 3.
1 shs Yellow Jacket at 1232½ per foot b 3.
5 shs Bullion at 37½ per share.
2 shs Belcher at 149/150 per foot.
15 shs Belcher at 153 per foot, b 30.
20 shs Imperial at 135 per share.
5 shs Confidence at 65 per share.
5 shs Confidence at 63 per share.
6 shs Confidence at 62½ per share.

10 shs Confidence at 60 per share, s 30.
10 shs Confidence at 62½ per share s 10.
5 shs Overman at 18 per share, b 30.
15 shs Overman at 17½ per foot.
10 shs Overman at 17½ per share.
10 shs Crown Point at 1370 per foot.
6 shs Crown Point at 1350 per foot.
4 shs Crown Point at 1360 per foot a 30.
4 shs Gould & Curry at 625 per foot.
\$5,000 Legal Tender Notes at 73½c s 30.
\$5,000 Legal Tender Notes at 70½c, a 60.
Amount of sales.....\$188,443 00

## Wednesday, January 9.

95 shs Ophir at 161 per foot.
24 shs Ophir at 157½ per foot.
10 shs Belcher at 150 per share.
6 shs Belcher at 160 per foot.
13 shs Confidence at 55 per share.
10 shs Confidence at 52½ per share.
15 shs Yellow Jacket at 1225 per foot.
6 shs Yellow Jacket at 1235 per foot.
6 shs Yellow Jacket at 1220 per foot s 30.
6 shs Yellow Jacket at 1235 per foot s 30.
1 shs Yellow Jacket at 1225 per foot s 10.
1 shs Yellow Jacket at 1232 per foot s 10.
18 shs Overman at 13 per share, b 30.
10 shs Overman at 16 per share, s 30.
10 shs Overman at 17 per share.
5 shs Overman at 16½ per share.
15 shs Chollar-Potosi at 245/242½ pr ft b 30.
10 shs Chollar-Potosi at 235 per foot.
150 shs Bullion at 32/23½ per share.
20 shs Bullion at 35/31½ per share, b 30.
10 shs Bullion at 20 per share s 30.
20 shs Crown Point at 1350 per foot, s 30.
2 shs Crown Point at 1360 per foot, s 30.
4 shs Crown Point at 1367½ per foot.
4 shs Crown Point at 1400 per foot b 30.
2 shs Imperial at 140 per share, b 10.
10 shs Imperial at 140 per share.

## AFTERNOON SESSION.

20 shs Overman at 17 per share.
2 shs Belcher at 161/165 per foot.
1 shs Belcher at 160 per foot b 30.
8 shs Belcher at 167½ per foot b 30.
½ shs Belcher at 160 per foot.
40 shs Confidence at 52 per share.
19 shs Confidence at 50½ per share.
7 shs Confidence at 50 per share.
12 shs Crown Point at 1390 per foot s 30.
5 shs Chollar-Potosi at 234 per foot, s 30.
2 shs Savage at 1990 per foot, s 60.
30 shs Ophir at 160 per foot, b 30.
30 shs Ophir at 157½ per foot.
30 shs Ophir at 153½ per foot.
30 shs Bullion at 25/29 per share.
4 shs Yellow Jacket at 1250 per foot.
4 shs Yellow Jacket at 1280 per foot.
100 shs Spring Valley Water at 61 per ct.
\$5,000 Legal Tender Notes at 72½c s 30.
Amount of sales.....\$153,747 50

## Thursday, January 10.

3 shs Confidence at 50 per share.
5 shs Confidence at 55 per share, b 20.
27 shs Spring Valley Water Co at 60½ p ct.
15 shs Chollar-Potosi at 237½/235 pr ft b 30.
1 shs Savage at 2000 per foot, b 30.
1 shs Savage at 1990 per foot, b 30.
10 shs Yellow Jacket at 1290 per foot.
6 shs Yellow Jacket at 1290 pr ft.
3 shs Yellow Jacket at 1290 per foot.
2 shs Yellow Jacket at 1290 per foot.
8 shs Crown Point at 1400 per foot s 30.
20 shs Overman at 17 per foot.
35 shs San Francisco Gas Co. at 65 p sh.
100 shs S F Gas Co. at 64½ per share.
40 shs Bullion at 31 per foot.
8 shs Belcher at 170 per foot.
5 shs Sierra Nevada at 2½ per share.
10 shs Imperial at 139 per share.
7 shs Imperial at 140 per share.
\$4,000 Legal Tender Notes at 74c.

## AFTERNOON SESSION.

10 shs Sierra Nevada at 2½ per share.
15 shs Overman at 17 per share.
20 shs Chollar-Potosi at 231 per foot.
3 shs Yellow Jacket at 1310 per foot b 30.
32 shs Alpha, G. H., at 200 per foot.
8 shs Gould & Curry at 630 per foot, b 5.
70 shs Spring Valley W W at 60½ per ct.
36 shs Ophir at 165 per foot.
35 shs Ophir at 165 per foot.
10 shs Bullion at 31 per share.
10 shs Bullion at 32½ per share.
2 shs Savage at 1950 per foot, s 30.
3 shs Savage at 1925 per foot, s 60.
2 shs Savage at 1950 per foot, s 60.
12 shs Belcher at 175 per foot.
15 shs Confidence at 67½/65 per share.
Amount of sales.....\$147,151 50

## Friday, January 11.

72 shs Ophir at 155/167 per foot.
22 shs Overman at 17 per share.
5 shs Belcher at 130/175 per foot.
8 shs Belcher at 178/177½ per foot, b 30.
21 shs Belcher at 176/170 per foot.
45 shs Bullion at 34/35 per share.
15 shs Bullion at 32 per share s 30.
1 shs Savage at 1950 per foot, s 60.
5 shs Confidence at 60 per share, b 5.
5 shs Chollar-Potosi at 237 per foot b 5.
15 shs Chollar-Potosi at 140 per foot b 10.
30 shs Chollar-Potosi at 238/239 per foot.
13 shs Chollar-Potosi at 237/239 per foot.
10 shs Chollar-Potosi at 237 per share s 10.
6 shs Yellow Jacket at 1297½/1315 per ft.
10 shs Spring Valley W W at 60½ per sh.
4 shs Crown Point at 1400 per foot.
2 shs Cal Steam Nav Co. at 63½ per cent.
\$2,500 Legal Tender Notes at 74½c s 3.
12 shs Ophir at 160 per foot, b 30.
72 shs Ophir at 154/160 per foot.
7 shs Belcher at 160/155 per foot.
6 shs Belcher at 160 per foot, b 30.
5 shs Belcher at 156/155 per foot, b 30.
2 shs Savage at 1900/1955 per foot s 60.
2 shs Savage at 1930 per foot, s 60.
5 shs Bullion at 33 per share, b 5.
8 shs Empire M & M Co. at 182½/180 p sh.
25 shs Overman at 17½ per share, s 10.
10 shs Overman at 18½ per share, b 30.
15 shs Overman at 17½ per share, s 10.
4 shs Yellow Jacket at 1310/1330 per ft.
1 shs Yellow Jacket at 1305 per foot.
25 shs Chollar-Potosi at 245 per foot b 10.
30 shs Chollar-Potosi at 237½/222½ pr ft.
1 shs Chollar-Potosi at 247½ per foot b 30.
7 shs Imperial at 145 per share.
8 shs Crown Point at 1400 per foot.
Amount of sales.....\$179,236 00

## MINING SHAREHOLDERS' DIRECTORY

[Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

RANK	AMOUNT OF ASSESSMENT	DAY	DELINQUENT	DAY
Ancient River Placer B. G. M. Co.	\$2.....	Dec 23	Jan 14	Annual Meeting Jan 14
Alameda G. M. Co.	.....	.....	.....	Annual Meeting Jan 14
Belcher Co.	\$15.....	Feb 1-Mar 5	.....	.....
Belcher Co.	\$5.....	Feb 1-Mar 5	.....	.....
Cosha S. M. Co.	\$1.....	Jan 21-Feb 11*	.....	.....
Crown Point, dividend.....	.....	.....	.....	Payable Jan 15
Confidence S. M. Co., Storey co., Nev., div. 10 p. a.	.....	.....	.....	Pay July 9
Chollar-Potosi S. M. Co.	.....	Annual Meeting Jan 14	.....	.....
Central S. M. Co.	.....	Annual Meeting Jan 22	.....	.....
Dios Pecho G. & S. M. Co.	\$3.....	Jan 3-Jan 22*	.....	.....
Eureka, San Juan, dividend \$1.50 per sh.	.....	Pay Indly-Sept 3	.....	.....
Empire M. & M. Co. dividend.....	.....	.....	.....	Payable Jan 12
Forest Springs Q. M. Co.	\$15.....	Jan 14-Jan 25	.....	.....
George Washington G. & S. M. Co.	\$1.50.....	Feb 9-Feb 25	.....	.....
Grand Central M. Co.	\$1.....	Jan 25-Feb 11*	.....	.....
Gould & Curry S. M. Co.	.....	Annual Meeting Jan 14	.....	.....
Gould & Curry, dividend \$80 ft.....	.....	.....	.....	Payable June 8
Golden Hile M. Co., dividend.....	.....	.....	.....	Payable Dec 20
Gold Quarrying Co.	\$40.....	Jan 11-Jan 25	.....	.....
Hauscom G. M. Co.	\$5.....	Jan 22-Feb 9	.....	.....
Hoppe Gravel M. Co.	\$1.....	Dec 23-Jan 15*	.....	.....
Hale & Norcross, dividend.....	.....	.....	.....	Payable Jan 15
Imperial G. & S. M. Co. dividend \$5 sh.....	.....	.....	.....	Payable Jan 15
Independent C. M. Co. dividend.....	.....	.....	.....	Payable Sept 1
Julia G. & S. M. Co.	\$1.....	Feb 16-March 6*	.....	.....
Josephine C. M. Co.	\$1.....	Feb 16-March 6*	.....	.....
Jefferson G. & S. M. Co. Yuba Div. \$100.....	.....	.....	.....	Payable Aug 23
Keystone M. Co. Calaveras Co.	\$10.....	Jan 21-Feb 11*	.....	.....
Kohler Bros S. M. Co.	.....	Annual Meeting Jan 14	.....	.....
La Blanca G. & S. M. Co.	\$1.50.....	Jan 15-Jan 31	.....	.....
Melones Stanislaus O. S. & C. M. Co.	\$2.....	Jan 14-Feb 4*	.....	.....
Monut Teanbo S. M. Co.	\$2.....	Jan 4-Jan 25*	.....	.....
Nampanet G. M. Co.	\$1.50.....	Jan 23-Feb 13*	.....	.....
Nor S. P. H. & R. H. Ass.	\$12.50.....	Feb 12-Mar 15*	.....	.....
Oxford Beta Tunnel M. Co.	\$50.....	Feb 4-Feb 25*	.....	.....
Ophir S. M. Co.	\$5.....	Feb 14-March 1*	.....	.....
Overman S. M. Co.	\$10.....	Jan 16-Feb 1*	.....	.....
Ophir S. M. Co.	\$5.....	Jan 23-Feb 15*	.....	.....
Pacific Coal M. Co.	\$5.....	Dec 24-Jan 21*	.....	.....
Patrocinia and Dolores S. M. Co. Mex.	\$2.....	Jan 5-Jan 21	.....	.....
Rattlesnake G. & S. M. Co.	\$1.....	Feb 9-Feb 25*	.....	.....
Rattlesnake G. & S. M. Co.	.....	Meeting Jan 25	.....	.....
Siskiyon M. Co.	\$5.....	Jan 21-Feb 20*	.....	.....
Santa Cruz P. O. W. 50c.....	.....	Jan 8-Jan 23*	.....	.....
Santiago M. Co. dividend.....	.....	.....	.....	Payable Oct 8
Savage S. M. Co. dividend.....	.....	.....	.....	Payable Dec 8
Serra S. M. Co.	\$4.....	Jan 16-Feb 2*	.....	.....
Sierra Nevada S. M. Co.	.....	Annual Meeting Jan 14	.....	.....
Salamanca G. & S. M. Co.	.....	Meeting Jan 19	.....	.....
Tuolumne Mountain G. & S. M. Co.	\$1.....	Jan 4-Feb 26*	.....	.....
Pexas Flat M. Co.	25c.....	Dec 20-Jan 21*	.....	.....
Triunfo G. & S. M. Co.	.....	Nov 30-Jan 31	.....	.....
Yellow Jacket S. M. Co., div. \$50 sh.....	.....	.....	.....	Payable Jan 15

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, JANUARY 11, 1867.	Bid.	Asked.
United States 7 3-10ths.....	\$ 78	\$ 79
Gov. Legal Tender Notes.....	74	74½
State Bonds, 7 ½ cent.....	83	87
Sau Francisco 10 ½ cent.....	100	102
San Francisco Bonds, 1855, 6 ½ cent.....	80	95
San Francisco Bonds, 1856, 6 ½ cent.....	64½	65
Sacramento City Bonds, 6 ½ cent.....	71	72
Sacramento County Bonds, 6 ½ cent.....	52	65
Marysville Bonds, 10 ½ cent.....	75	85
Stockton Bonds, 10 ½ cent.....	85	95
Yuba County Bonds, 10 ½ cent.....	75	85
Butte County Bonds, 10 ½ cent.....	70	80
California Navigation Co.....	65½	69
State Telegraph Stock.....	29	29
Sacramento Gas Co.....	65	65
Spring Valley Water Co.....	60½	60½

## RAILROADS.

Sacramento Valley Railroad.....	—	—
Omnibus Railroad.....	55	60
Central Railroad Co.....	—	55
North Beach and Mission.....	49	62

## MINING STOCKS.

Alpha.....	\$200	\$250
Bullion, G. H.....	33	34
Belcher.....	155	160
Confidence.....	55	60
Ophir.....	150	154
Gould & Curry.....	615	680
Empire M. & M. Co.....	175	180
Savage.....	—	2000
Chollar-Potosi.....	240	242
Hale & Norcross.....	2500	—
Yellow Jacket.....	1325	1330
Overman.....	17	17½
Crown Point.....	1350	1400
Imperial.....	145	146

## San Francisco Market Rates.

## Wholesale Prices.

FRIDAY, JAN. 11, 1867.	6 00 @ 6 50
Flour extra, ½ bbl.....	4 75 @ 5 25
Do Superfine.....	2 00 @ 2 50
Corn Meal, ½ 100 lb.....	1 25 @ 1 75
Wheat, ½ 100 lb.....	1 35 @ 1 50
Barley, ½ 100 lb.....	2 50 @ 3 50
Beans, ½ 100 lb.....	60 @ 1 25
Potatoes, ½ 100 lb.....	8 00 @ 14 00
Hay, ton.....	8 00 @ 10 00
Live Oak Wood, ½ cord.....	5 @ 5
Beef, on foot, ½ lb.....	10 @ 12½
Beef, extra, dressed, ½ lb.....	3 00 @ 3 50
Boeap, on foot, ½ lb.....	7½ @ 8
Hogs, on foot, ½ lb.....	10 @ 12
Hogs, dressed, ½ lb.....	—



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## Calaveras County.

The San Andreas Register thus writes of Copperopolis: Though business is dull there at present, as it is everywhere, yet the people are buoyant with the hope of a brisk revival as soon as the spring is fairly opened, and travel is resumed as usual. A large number of the suspended mines will be re-opened and worked vigorously, and, we trust, with entire success. All that is necessary to make that one of the most flourishing mining towns in the State, is capital sufficient, and a wise and judicious use of it in developing the hundreds of lodes already known in that immediate vicinity.

## El Dorado County.

From the Courier of Jan. 5th: The Placerville Gold Mining Company was organized in this city on the 4th inst., with a capital stock of \$500,000, divided into 25,000 shares of \$20 each. . . . Chub Napier found near his cabin at Poverty Point, a few days since, a pocket, from which he took four ounces of gold.

A Brownsville correspondent of the Democrat says: The Independence claim, 1,200 feet in extent, was opened some three months ago, from which three runs have been made. The first run of 100 tons paid \$3,500. The next run of the same amount of rock came within ten dollars of paying as much as the first, and the third run of eighty-eight tons was cleaned up to-day, from which they obtained 600 ounces of amalgam, which, after retorting, will leave, perhaps, about 400 ounces of gold. . . . Mr. Norton and others are erecting a 5-stamp mill on the Still-wagon ledge. . . . The Confidence Company have rich rock on top, and are running a tunnel to strike the ledge at the depth of 200 feet. . . . The Vulture is a small but rich vein. Tunnel fifty feet. . . . The Georgia has a shaft twelve feet, with a small ledge prospecting \$100 per ton, and widening as it goes down.

## Kern County.

From the Havilah Courier of Dec. 29th: In Washington district, the Belmont lode is now being vigorously worked, and is producing very rich quartz. The ledge is about two feet in thickness, and the ore is easily extracted.

The William L. Yancey, owned by Henderson, Reynolds & Calhoun, is producing rock of the richest character. The lode is about eight inches in thickness, and from all appearances will pay over \$100 per ton.

H. T. Miller, who is working on an extension of the Yancey, has a shaft down over forty feet, and the ledge is over one foot in width, and the quartz taken from it is rich in gold.

Among other ledges now being worked, are the Cumberland, the Mountain Queen, the Greenbush, etc., etc. The late heavy rains will no doubt lead to the discovery of many blind lodes in this district. We understand that the late rise in Kern river has damaged the arastras considerably, and retarded the working of rock for a short time.

In Dahlona district, the Rupert lode, owned by Williams, Rogers & Martin, is, we learn, turning out finely. This is a large, well-defined ledge. . . . Donnell, Erskine & Davis have opened a very rich quartz lode in this district. . . . A new discovery has been made lately about four miles below this district, by Tinnan & Martin, of a large quartz lode, which prospects very finely on the top.

In Clear Creek district the Kellum & Wright mill has changed hands, and is now owned by men with the energy and capital to go ahead. The same parties have also purchased several lodes in this district, and we may expect soon to see the mill in active operation.

The Union mill (Piepers) and the Jenny Lind mine have been sold to Gidden & Williams and Oakes Ames, of Boston, Mass. . . . Wm. Marsh & Co. have lately been taking out very rich rock from the Venus lode.

The "New El Dorado District," east of Mount Swain, was organized in April. Four companies have located some thirty or forty lodes. Two of these only have accomplished anything. Of these two, the Clear Creek company have sunk two shafts of thirty feet each, and built a 22-foot overshot wheel, from lumber whip-sawed with their own hands. This wheel is intended to drive two 6-foot arastras and two stamps.

The other company, named the St. John, have sunk a shaft 115 feet, finding a vein from ten to twenty inches wide. They have been erasing rock from this vein for some time, by horse-power with arastra, and on the 17th instant, cleaned up from two arastras, after a five weeks' run, \$890. They purpose sinking their main shaft deeper.

## Mono County.

The Sacramento Union of Dec. 24th, says: Messrs. Whitney & Co., received yesterday from Shingle Springs, 3,000 pounds of silver bullion, from the Chrysopolis mine, in the Blind Spring district, Mono county, fifty-two miles south of Aurora. A furnace has been erected at this place for smelting the ore, and this is the product of the second smelting. The first smelting of fifty hours' continuance yielded three-quarters of a ton, which was shipped recently through Stockton. The present shipment was the product of six days' smelting. The 3,000 pounds, if pure silver, would be worth nearly \$50,000. The Camanche mine, in the same district, owned in part by the same stockholders, produces ore which yields about \$1,000 per ton, several shipments of which have passed through the city for transmission to Swansea.

## Nevada County.

From the Gazette of Jan. 5th: We learn from a gentleman down yesterday from You Bet, that Brown & Co., on Brown's Hill, cleaned up, on Sunday last, \$1,185 from five days' run of their mill. From the same we learn that Mallory & Company are doing first rate in their claims, adjoining Brown's.

A correspondent of the Grass Valley National, writing from You Bet, Dec. 27th, says: None of the cement mills are paying very largely at the present time. There are but few of them but what are paying more than expenses, and some of them have flattering prospects for good dividends soon. Messrs. Cozzins & Garber, who have been so unfortunate of late, have suspended working their cement mine at present. While drifting under the bed of Missouri Cañon, they had a cave, which extended to the surface and let in so much water that with their present machinery they are unable to pump it out.

The Chalk Mountain Blue Gravel Co., claiming several miles on what is supposed to be an ancient blue gravel channel, started an incline which they expected to have to run from 600 to 700 feet to strike the river bed, but through some miscalculation they struck it some 600 feet nearer the surface than was expected. They talk of moving farther up their claims to a more favorable location for opening up their mines.

The mills at Hunt's Hill are running, are crushing excellent cement, and are making good profits.

The Green Mountain Company, situated between Hunt's Hill and Quaker Hill, have had a very tedious time getting their mine open, and have been at a great expense. They have struck very rich gravel, and the mill is now paying well.

From the Transcript of Jan. 5th: The year 1867 opens auspiciously for Nevada county. The heavy storms of December, though they did much damage, brought their good. The tailings have been swept out of the ravines and gulches, and the hydraulic miner has a chance to lay his sluices with sufficient fall to wash the gold. The reservoirs are full, and in many localities there is an abundant supply of free water for the miners. Quartz mines are paying well. The cement mines of Little York township still continue to yield handsomely, and there is no longer a scarcity of water to keep the mills going. Hydraulic claims are being opened in every part of the county, and an immense amount of this kind of mining will be done during the year.

We learn that John Baldwin picked up a quartz specimen in a ravine on Gold Flat, on Monday last, worth between fifteen and twenty dollars.

EXCELSIOR.—From the Nevada Gazette of Jan. 7th: The U. S. Grant Company have been the most successful of the mining companies carrying on operations in Meadow Lake district during the past season. The claim is on the Ohio ledge. The ledge is five and a half feet in width. The mill has five stamps of 500 pounds each, and the capacity of the mill is seven tons a day. The number of tons reduced up to the present time is 271, and the gross yield \$13,398.57—being within a fraction of \$50 a ton. The cost of mining and hauling the rock is \$5.50 a ton, and the expense of crushing \$3.50, leaving a profit of \$40 a ton. Twenty men, on an average, are employed in the mill and mine. A 15-stamp mill will be erected in the Spring.

The Transcript of Jan. 6th says a bar of gold valued at between \$1,200 and \$1,900, the result of one week's run of the U. S. Grant mill, was brought down on Friday.

From the Meadow Lake Sun of Dec. 29th: The report of the Superintendent of the Mobawk and Montreal Company shows that 163 tons of ore had been crushed at the Winton mill, with an average yield of \$29.35 per ton.

Judge Tilford, who has retired from the editorial chair of the Meadow Lake Sun,

has just returned, says the Gold Hill News, of Jan. 3d, to Virginia. He reports the snow eight feet deep on the level at Meadow Lake, and the people housed up for the winter. Many of the mines, however, are being vigorously worked. The Golden Eagle Company will have their mill running within ten days. The company have out a large amount of splendid ore, free gold being visible to the naked eye in all of it. The U. S. Grant Co. keep their mill running all the time. The ore yields from \$50 to \$80 per ton on the average. The California Co. have succeeded in getting all their matters straightened up, and work is being pushed forward; the stock, which two months since was not worth more than \$2 per share, is now worth \$15. The Mohawk Co. except to have their mill in running order within a few weeks. The Enterprise mill, erected on the Enterprise mine, by Goss & Lambard, has been crushed in by the snow, and the whole concern has gone to wreck.

## Placer County.

From the Stars and Stripes of January 2d: Captain Mallett has purchased a half interest in the Badger company's claims and ground, located at the head of Badger ravine, near Gold Hill, for the sum of \$3,000 cash, and is to erect and have a mill running on the same by the first of February. All the ravines heading in the ridge west of Auburn, which ridge extends a distance of about eleven miles to the plains below, have furnished rich surface diggings in the past, and the cement formation, which is very extensive, has invariably paid well for the time and capital employed in working it.

From the Dutch Flat Enquirer of January 2d: The mines in the vicinity of Gold Run, we learn, are yielding larger returns this season than at any former time.

From the Placer Herald of January 5th: Captain Mallett has already purchased his mill, and will have it running in thirty or forty days.

Some of the mine owners about Forest Hill and Yankee Jim are proposing to hire Chinese to work their claims. We learn that an indignation meeting was held at the "Hill" on Saturday evening last.

## Sierra County.

From the Messenger of January 5th: The Good Hope are still working their ledge with a view of securing a heavier back. There is a rumor that they will put up a mill in the spring. . . . The Montpelier company are, pending the completion of their tunnel, at work clearing out the old working of the Wheeler ledge—part of their purchase—with a view of sinking down, if practicable. . . . Anderson & Co., who have been working Sing Canon, near Cowdery's quartz mill, took out, a few days since, a slug that weighed seventy-five dollars. . . . Cunningham & Co. are preparing to flume Slug Canon, near the old saw mill, and are busily at work constructing a dam and putting in boxes. . . . We hear that at Eureka, Morristown and other hydraulic diggings throughout the county, water is plentiful, and miners are jubilant with pipe and pick. A few weeks of water now, insures success in the spring. . . . A new quartz ledge has been discovered near Indian Hill, which abounds well in free gold.

The Sling Canon mill has been entirely remodeled. It was started on New Year's day to test its working, and everything went to a charm. It has five stamps, and will crush from six to eight tons of quartz per day. Eight men are employed in the mine and mill.

Letter to same paper from Howland Flat says: A fair amount of gold is being produced—more than usual for the time of year. The different mining companies are doing very well. The Union, Down East, and Mountaineer companies are reputed to be in a thriving condition, while other companies are paying fairly. The Hawkeye company are nearly opened again, as before, while their new tunnel is going on rapidly from the Howland Flat side. This new tunnel is named the El Dorado. The tunnel of the Monumental company is still being driven along. The rock, which has been hard for a very long time, shows signs of changing. The Pittsburg company are employing the same number of hands as usual—about forty-five. The suspension was only for two days.

Letter from Indian Hill: Jones & Co. have fitted up in good style the old Gregg claims that have lain idle for the last seven years. . . . Charlton & Co. have added six hundred feet of pipe and a second distributor. Their claims have already yielded about ninety thousand dollars. During the late storm a land slide did them some \$300 damage. . . . Andrews & Co. have run a tunnel about three hundred feet. . . . Bliss & Co. have got some good prospects at the east end of the town. . . . The ditch agent, while out during the late storm, discovered some very rich quartz. A few ounces pounded in a hand-

mortar and panned out in a sancer, gave product good for \$200 per ton. The discovery was made on the north fork of Indian Creek.

Letter from Pine Grove, December 25th: Snow four feet deep, and still coming down with that wild fury peculiar only to a Sierra snow storm. All outside business suspended. Tunnel mining being pushed ahead with vigor, yielding the usual good results.

## Siskiyou County.

A dispatch, dated Yreka, Jan. 3d, says: The weather for the past three weeks has been very stormy, especially in the mountains, where snow has fallen to a great depth. Scott and Klamath rivers have been so high, as to stop stages. Mining on the bars has been suspended for the present. Accounts from all the mining districts show that the miners have plenty of water, with a fair prospect of a good clean up in the spring. The snow on Scott Mountain is from twelve to fifteen feet deep.

## Yuba County.

From the Marysville Appeal of Jan. 3d: On New Year's day, at one o'clock in the afternoon, the 100-horse engine was started and all the machinery—16-stamp battery, 10 inch pump, carriages for lifting ore, two Chile mills, etc., etc.—moved off to the entire satisfaction of all. The company have about 150 tons of rock on the surface. The mill will crush about thirty-five tons per day, which yields \$16 to \$45 per ton.

The Bateman Company, of Indiana Ranel district, has struck a very rich rock. This company has been taking out good pay rock for some time, and hauling it to the mill or Templar No. 2 to be crushed. The last strike appears to be better than ever.

From the North Californian of Jan. 7th: The works of the Unconditional Union Company are twelve miles from Oroville, and two and one-half miles south of the La Porte road. The claims embrace 4,000 feet on two ledges. Shaft have been sunk for prospecting 2,000 feet, and a tunnel is now within a few weeks of completion, which will tap both ledges at a depth of 300 feet below the surface. Through this tunnel the quartz can be delivered at the mill for sixty cents per ton.

## NEVADA.

## Esmeralda—

A letter to the Territorial Enterprise from Wilson district, dated Pine Grove, Jan. 1st, has the following items: Work on the mill is now going ahead with all reasonable dispatch. I am informed by one of the proprietors that in five weeks from the day the last load of machinery arrives, (which will probably be this week), the steam whistle will startle the Piutes of Wilson district. Part of an arastra mill has been brought in and the rest will soon be here. This mill, it is said, will be in operation within twenty days. A number of arastras will also be in operation in a short time.

On several of the mines operations have commenced in good earnest. The Wilson and Midas Companies, on the Himalaya and other parallel ledges, have started a joint tunnel to prospect their claims. This tunnel will be run with all possible dispatch. The Wheeler Company, on the Mastodon ledge, are now at work in the old shaft, and are down fifteen or eighteen feet. To-day, I visited the Wheeler mine, and saw the richest rock yet found in this district. Out of each tubful raised while we were there, it was almost impossible to find a piece of rock which did not show free gold. As the shaft goes down the rock improves and the ledge is better defined. On the Hamilton ledge a contract has been let by the Hamilton and Forrest Companies, to sink a shaft twenty-five feet, and the contractor is now busy at work. Other companies will soon begin operations.

## Reese River—

From the Revelle of Dec. 27th: A. T. Gould has received one-half of the southern location on the Keystone ledge. He has two shifts engaged in taking out ore, and expects to keep the mill of the Consolidated Company in full work.

Prof. Everett has sunk to the depth of fifteen feet on the Hunter mine, and exposed a fine body of ore fully fifteen feet wide.

The New York and Social Company, in Egan Canon, have had their mill running for a week. The principally developed ledge of the company, the Gilligan, is being worked again, and is yielding as fine ore as of old.

From same of 29th: The Morgan and Muncey is being put in fine condition. At the greatest depth of the incline the vein displays handsome mineral of a remarkably compact body, and blushes all over with tints of ruby. Preparations are being made to stoop from the lower level. . . . We learn that a complete 5-stamp mill will be taken to the Revelle district immediately, where it will be erected and put to crushing ore. . . . The Keystone mill will close this evening for necessary repairs. After being thor-



oroughly overhauled, it will resume operations about the 15th of January.

In Mammoth district, the Mount Vernon Company are continuing their work both upon shaft and tunnel with very satisfactory results, having struck a ledge of rich ore in the shaft of about twenty-five feet in thickness. The owners of the Uncle Sam group have made arrangements with the superintendent of the Knickerbocker mill at Lone to work about one hundred and fifty tons of their rock, which they have commenced getting out. Ferguson & Co. are still at work on the American Flag, the ledge increasing in width and the quartz in richness as they descend. They are down with the shaft about one hundred and fifteen feet, showing a ledge about six feet wide. They intend soon to start a drift, and also to continue the shaft for thirty or forty feet yet. The Superintendent of the Ural Silver Mining Company, C. E. Gillet, has been having rock worked from several of the ledges in this district—the Ural, Gould & Curry, Albany, Kearsarge and Robinson, among the number—all of which "work" at figures that will pay even from the surface with a good mill near by; the figures being from \$60 to \$100 per ton in silver.

From same of January 2d: The new mill of the Combination Company, just completed in the Hot Creek district, commenced crushing ore on the morning of the 27th ult.

Some 650 pounds of bullion were brought into town yesterday from the mill of the Twin River Company.

#### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Jan. 1st: Thomas Farrell has brought an action to recover mining ground and \$500,000 damages from the Savage Company. The ground claimed is a portion of the front ledge, just east of the Comstock, known as the Mitchell lode, and includes six hundred feet, extending north from the Hale & Norcross north line.

From same of 5th: The damages caused by the flood in Carson river, to the dams, etc., a couple of weeks ago, are now repaired, and all the mills in the vicinity of Dayton are in full operation crushing ore from the old Comstock.

Same of 6th: The new shaft of the Imperial and Empiro companies has now attained a depth of 750 feet, and the work of sinking deeper is being actively prosecuted.

At Edwards & Wiegand's assay office, Gold Hill, yesterday, was a pile of twenty-seven silver bars, worth about \$40,000; all from the Crown Point mine. The crude bullion used in the manufacture of these bricks, when brought to the office, weighed three-quarters of a ton.

We present the following report of bullion shipped from the office of Wells, Fargo & Co., in this city, during the past year of 1866, just merely to give some idea of the vast amount of wealth produced from the great Comstock lode. This is independent of what is shipped from their office at Gold Hill or anywhere else:

January.....	\$520,177 20
February.....	402,322 91
March.....	705,210 33
April.....	616,387 50
May.....	618,776 71
June.....	561,938 70
July.....	595,503 77
August.....	779,276 59
September.....	643,063 97
October.....	686,517 23
November.....	739,512 30
December.....	786,436 96
Total.....	\$7,807,616 18

From the Gold Hill *News* of Dec. 24th: The Petaluma mill is almost ready to commence running. The batteries, four in number, with four 700-pound stamps, are built in the most improved style, and in the most substantial manner. The pans are of the Wheeler pattern, but much larger than ordinary. There are eight, and it is calculated they will work thirty tons every twenty-four hours.

From same of Jan. 4th: Yesterday we were down to see the Savage works, at what is known as the Curtis shaft. The new 250-horse power engine pump is in full operation, and a more complete engine and machinery we have never seen any place than this. The machinery works perfectly noiseless, while in the gearing a wooden wheel works against an iron one, making the thing perfectly quiet.

For over two weeks the roads have been so miry that it has been impossible to deliver the ore at the mills. Many of the teams have hauled off, while those that are at work cannot deliver more than half the amount they could if the roads were in good condition. Many of the mills are lying idle for want of ore, while many of the mines have been compelled to suspend

operations for want of dumping room for the ore that is being taken out. This is the cause of the deficiency in our shipments. The mines of the Comstock ledge never looked more promising than they do at the present time, nor have they ever yielded more paying ore than now. At the Savage there is in the new dumps at the present time 2,000 tons of first-class ore, which will give a yield of not less than \$80,000 to say the least of it. In fact all the mines where pay ore is being taken out is in the same condition.

From the *Virginia Union* of Jan. 2d: At this time there is fifty tons of first-class ore at the Yellow Jacket new works awaiting shipment. It assays from \$400 to \$500 per ton. The Petaluma mill started up yesterday on the Savage ore.

From same of 4th: We learn that there have recently been a number of rich ledges located beyond and to the east of Death Valley and in the Black Mountains. We were shown some of the ore. Horn silver is plentiful in it, and the entire quartz abounds in sulphurets. The ledges are from eight to thirty feet in width, and crop out prominently, being traceable for a long distance on the mountain side. The region is excellently watered and wooded.

A telegram from Gold Hill, Jan. 8th, says: The Yellow Jacket north mine opened into a new body of ore to-day, 140 feet east of that on the level above. It looks fine.

#### ARIZONA.

From the *Miner* of Dec. 15th: The ore from the Ticonderoga mine in Goodwin district, near Big Bug, is being worked at Woolsey's mill, yielding from \$50 to \$100 per ton. The lead is about seven feet wide.

Our favored mine the Sterling, now promises wealth and happiness to its lucky owners. No mine in Nevada nor California has ever surpassed it in product or prospects. Since the last clean-up a most thorough and careful examination of the mine has been made by competent and experienced men, with the most satisfactory results. If Uncle Samuel or some other human power will exterminate our infernal redskins, so that men can come here safely, we may look for times well remembered in Nevada in '61-2 and 3. No such prospects were then known in that State, nor do we believe there is a place on the Pacific coast that promises so well for mining as this section of Arizona at this moment.

In the neighborhood of the Sterling are several other mines, known and proved to be very rich and reliable. The Muehella and Umpqua are both being worked, and have exceeded the expectations of their owners.

The *La Paz Gazette* of Dec. 13th, says that Noyes' 10-stamp mill had arrived from Fort Yuma a few days previous.

#### BRITISH COLUMBIA.

Victoria dates to Jan. 5th: Mr. Jerrold, with a party of eight, arrived last week from Big Bend. There are between fifty and sixty persons wintering on French Creek. The weather was not severe when Mr. Jerrold left, and snow lay to the depth of two feet. Gold Hill claim, on this creek, excites considerable interest, and more confidence is felt in its richness. A mining company has been organized to prospect ground in the rear of this claim. Five men were at work on Discovery claim, making two or three ounces per day rocking their dirt. Three other companies in the creek are at work with satisfactory results. In McCulloch's Creek three companies are at work.

Parties from Cariboo report most companies doing well on William's Creek. The Taylor claim has prospects of ten dollars to the pan. The Grouse Creek claims are doing well. Low Creek is also improving. Canon and Cedar Creeks are being thoroughly prospected; much enthusiasm is felt in the result. About 1,000 persons are wintering in and about Cariboo.

A valuable coal seam has been discovered within twenty miles from Victoria.

The prospects for working the Bellingham Bay coal mines are improving. A new pump has been erected.

#### COLORADO.

From the *Journal* of Dec. 18th: G. H. Sabin is starting up on the Union Company's claim, on the Bates. G. R. Mitchell is fitting up the mill erected by Mr. Tobin, for crushing ore from the Alps. Yesterday hands were put on the Consolidated Gregory's claim. The company will soon be in full blast. Truman Whitcomb, of Nevada, is running his 12-stamp mill on ore from the California lode. The ore appears to be rich. Lyon's Furnace Company have a nice lot of tailings matted. They are running but one furnace, and one desulphurizer at present. J. D. Peregrine's new 24-stamp mill is being pushed rapidly towards completion, and is situated

immediately below Lyon's furnace. The Ophir Company are fixing up their railway and putting on new cars. They are also erecting a new building to cover the lode. They are also about putting in a new engine for hoisting, together with a pump. The Briggs Company commenced this morning on the Gregory. The mill will not be set going at present. Mr. Vissing is operating the Monnier process, in the mill erected by Mr. Fink. He has commenced desulphurizing. The Smith & Parmelee Company have struck very rich pay on the west end of their mine. They are running the 25-stamp mill; the Empire mill, eighteen stamps, and the Fitzpatrick mill of eight stamps. We were handed a fine specimen taken from the Waterloo lode, Idaho district. At a depth of thirty-three feet the crevice is said to be four feet between walls.

The Sonora company have drifted into a crevice in the Agnes lode 100 feet, and have a vein of \$70 ore. They are well supplied with means for a winter's campaign. In Georgetown, Smith & Herriek have nearly completed their furnace. The Washington Company have commenced to erect large smelting works.

From the *Denver News* of Dec. 19th: A specimen from the Summit lode, Georgetown, gave by assay \$2,000 per ton.

Hoyt, Widener & Co. have just struck a solid mass or concentration of quartz veins, some 300 feet in width, on James' Creek. The rock is rich in gold, silver and lead, and is one of the finest smelting ores in Colorado. This lead is to be worked by the Etina Tunnel Company.

The Sterling mill is crushing Bobtail ore worth from \$150 to \$200 per cord. Hale & Co. are opening the Etina lead just below. They have run in some 150 feet. The 60-stamp Black Hawk mill is running on Gregory ore. Twenty stamps will soon be added. The Briggs Company are hoisting water, preparatory to resuming operations. The Consolidated Gregory will resume full work as soon as the lower level is drained.

Five mills are now running at Empire, and turning out from two to five thousand dollars per week. Mr. Leeper's mill, with the Keith process, has not yet got down to steady work, but soon will. His works are very complete.

In the neighborhood of Georgetown, some very rich silver discoveries have recently been made, and there is a good deal of excitement about them.

A good deal of gold washing is being done all along Clear Creek, and with satisfactory results. The water has got down low, so that miners can get down into the bars, from which they were barred out all summer.

#### IDAHO.

From the *Avalanche* of Dec. 22d: In the Woodstock, the prospects are gratifying. Two lots of ore crushed in the Webfoot mill, paid something over expenses. The ledge has been so far opened that a ton of ore is extracted daily. We were shown several pounds of it on Wednesday, and it all shows rich in sulphurets of silver and much free gold. The lowest depth is twenty-seven feet. A tunnel has been started and ore will be taken out all winter. The vein has every appearance of being a true one, and is now two and one-half feet thick.

The Shoenbar mill is to start this morning. All things were in readiness yesterday and the whistle that has been silent for just a year will be heard again. Lots of ore from the Silver Cord, Dashaway, Whisky Gulch, and probably from the Vulcan, will be crushed.

The Reuter & Johnson ledge is paying wages right along. The ore is worked in an arastra. As stated months ago, these men patiently prospected many months for this ledge and paid their way by working float quartz in a hand mortar.

The Reynolds Creek Coal Company is sanguine of finding coal in paying quantities. The tunnel now reaches into the hill over two hundred feet, and is being pushed forward. Timbers are provided for a full winter's work, and the company is determined to find coal in a large body or spend much money and labor trying.

From the *Times* of Dec. 11th: "The mining in the creek has not altogether been suspended as yet, notwithstanding the cold weather. Several companies are yet at work, and innumerable rockers are telling every day upon the resources of this country. We have heard very little of late from the company formed for the purpose of putting a bedrock flume in More's Creek. A large number of miners in the immediate vicinity of Idaho City and Buena Vista Bar are engaged in drifting out pay dirt, and the winter and early spring promise to be unusually lively in the way of mining."

#### MONTANA.

From the *Post* of Dec. 15th: Ten pounds of ore from the Copperopolis lead in Vi-

vian county, assayed 33 per cent. of pure copper, and yielded gold at the rate of \$40 per ton, and silver at the rate of \$600 per ton.

The Midas Company, which is largely engaged in mining operations in Nevada, and owns one mill containing eighty stamps, is permanently located in the Hot Spring district. Professor Ward is superintendent, and has erected several buildings, including a fine one for an engine and machinery. A large number of workmen are employed by this company in extracting quartz, which will be crushed during the winter.

There has been considerable excitement created over the discovery of the dry gulches around Indian Creek, and from what we can learn from parties who have visited the section, the mines bid fair. A ditch some five miles in length is being brought in by Messrs. Coover & Thompson.

Helena items: Trinity Gulch was discovered on Dec. 1st, near "Lost Horse." It prospects from fifteen to sixty-five cents to the pan. Postlethwaite & Co. have erected a 24-stamp mill, at a cost of \$40,000. Heald & Front have an exceedingly rich lead about half a mile above the intersection of the Rattlesnake and New York gulches. Two tons of ore yielded \$311. The shaft is thirty-five feet deep. The ore is worked in an arastra. Judge L. G. Turnley's mill cleaned up from a four day's run of fifty-five tons of Whitelake Union ore, \$3,708, with two stamps hanging up. Unfortunately the breaking of several stamps compelled the machinery to stop.

Letter to same paper from Red Mountain, Highland Gulch, says: We have here two very rich leads lately discovered, the Ballarat and the Evans. There are but two claims being worked at present in the gulch, and they belong to Mansfield and Heifner. The first takes out about \$2,000 per week, the latter about \$1,400. When the work stopped in the gulch, the miners were averaging from \$20 to \$100 per day.

George Aitkin, engineer of the Montana Mining and Prospecting Company, reports most favorably of the veins recently examined by him. We quote from the *Brooklyn Union*: "The Toledo, Alameda, Mother Heudricks and Uncle Tom are equal, by common mill process, in free gold, to \$100 per ton. These lodes will now command \$5,000 per claim. On the Alameda, at the Seneca Falls mill, I worked seven thousand pounds, by weight, took up clean gold \$360, and could not save half of it by the old way of running it on copper plates. It is now \$20,000 per claim of 200 feet."

Mr. Cope's mill in Hot Spring district, has been running for two months. Some 200 tons from various lodes during that time have yielded about \$10,500.

#### OREGON.

Jacksonville news of January 4th, is to the effect that gold has been again struck in the celebrated Ish or Gold Hill lead, and the prospects are very flattering.

IMPROVEMENT IN THE REFINING OF GOLD AND SILVER.—Andrew Mason, melter and refiner in the New York assay office, has made an improvement in the mode of parting gold and silver, which is to be introduced into all the branch mints. It consists in so adjusting the metals for granulation that the pure gold, instead of gold bullion, shall constitute one-third of the mixed metal; and secondly, in boiling the gold in sulphuric acid, after one treatment in nitric acid. The one charge of nitric acid is to be made larger than the first in the old process, but 20 per cent. less than the amount in both, while the consumption of fuel is greatly reduced, and much disagreeable labor removed. It is estimated that the saving in one year's business would amount to \$70,000, rating the cost of mining in California at 50 per cent. greater than in New York. The economy in the above mode of parting, consists in the employment of a less quantity of nitric acid than has heretofore been used, which is replaced by sulphuric acid—the latter costing only about one-third as much as the former.

IRON IN SANTA CRUZ COUNTY.—The Santa Cruz *Sentinel* of the 22d of December says an extensive bed of iron ore has been discovered a few miles north of that place, near the beach. Wood and water are plenty, and it is spoken of as a good chance to invest.

TWO HUNDRED and twenty millions pounds of paper is used every year in England. The United States consumes four hundred and forty millions of pounds.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## Calaveras County.

The San Andreas Register thus writes of Copperopolis: Though business is dull there at present, as it is everywhere, yet the people are buoyant with the hope of a brisk revival as soon as the spring is fairly opened, and travel is resumed as usual. A large number of the suspended mines will be re-opened and worked vigorously, and, we trust, with entire success. All that is necessary to make that one of the most flourishing mining towns in the State, is capital sufficient, and a wise and judicious use of it in developing the hundreds of lodes already known in that immediate vicinity.

## El Dorado County.

From the Courier of Jan. 5th: The Placerville Gold Mining Company was organized in this city on the 4th inst., with a capital stock of \$500,000, divided into 25,000 shares of \$20 each. . . . Chub Napier found near his cabin at Poverty Point, a few days since, a pocket, from which he took four ounces of gold.

A Brownsville correspondent of the Democrat says: The Independence claim, 1,200 feet in extent, was opened some three months ago, from which three runs have been made. The first run of 100 tons paid \$3,500. The next run of the same amount of rock came within ten dollars of paying as much as the first, and the third run of eighty-eight tons was cleaned, up to-day, from which they obtained 600 ounces of amalgam, which, after retorting, will leave, perhaps, about 400 ounces of gold. . . . Mr. Norton and others are erecting a 5-stamp mill on the Stillwagon ledge. . . . The Confidence Company have rich rock on top, and are running a tunnel to strike the ledge at the depth of 200 feet. . . . The Vulture is a small but rich vein. Tunnel fifty feet. . . . The Georgia has a shaft twelve feet, with a small ledge prospecting \$100 per ton, and widening as it goes down.

## Kern County.

From the Havilah Courier of Dec. 29th: In Washington district, the Belmont lode is now being vigorously worked, and is producing very rich quartz. The ledge is about two feet in thickness, and the ore is easily extracted.

The William L. Yancey, owned by Henderson, Reynolds & Calhoun, is producing rock of the richest character. The lode is about eight inches in thickness, and from all appearances will pay over \$100 per ton.

H. T. Miller, who is working on an extension of the Yancey, has a shaft down over forty feet, and the ledge is over one foot in width, and the quartz taken from it is rich in gold.

Among other ledges now being worked, are the Cumberland, the Mountain Queen, the Greenbush, etc., etc. The late heavy rains will no doubt lead to the discovery of many blind lodes in this district. We understand that the late rise in Kern river has damaged the arastras considerably, and retarded the working of rock for a short time.

In Dahlonega district, the Rupert lode, owned by Williams, Rogers & Martin, is, we learn, turning out finely. This is a large, well-defined ledge. . . . Donnell, Erskine & Davis have opened a very rich quartz lode in this district. . . . A new discovery has been made lately about four miles below this district, by Tinnan & Martin, of a large quartz lode, which prospects very finely on the top.

In Clear Creek district the Kellum & Wright mill has changed hands, and is now owned by men with the energy and capital to go ahead. The same parties have also purchased several lodes in this district, and we may expect soon to see the mill in active operation.

The Union mill (Piepers) and the Jenny Lind mine have been sold to Glidden & Williams and Oakes Ames, of Boston, Mass. . . . Wm. Marsh & Co. have lately been taking out very rich rock from the Venus lode.

The "New El Dorado District," east of Mount Swain, was organized in April. Four companies have located some thirty or forty lodes. Two of these only have accomplished anything. Of these two, the Clear Creek company have sunk two shafts of thirty feet each, and built a 22-foot overshot wheel, from lumber whip-sawed with their own hands. This wheel is intended to drive two 6-foot arastras and two stamps.

The other company, named the St. John, have sunk a shaft 115 feet, finding a vein from ten to twenty inches wide. They have been crushing rock from this vein for some time, by horse-power with arastras, and on the 17th instant, cleaned up from two arastras, after a five weeks' run, \$890. They purpose sinking their main shaft deeper.

## Mono County.

The Sacramento Union of Dec. 24th, says: Messrs. Whitney & Co., received yesterday from Shingle Springs, 3,000 pounds of silver bullion, from the Chrysopolis mine, in the Blind Spring district, Mono county, fifty-two miles south of Aurora. A furnace has been erected at this place for smelting the ore, and this is the product of the second smelting. The first smelting of fifty hours' continuance yielded three-quarters of a ton, which was shipped recently through Stockton. The present shipment was the product of six days' smelting. The 3,000 pounds, if pure silver, would be worth nearly \$50,000. The Camanche mine, in the same district, owned in part by the same stockholders, produces ore which yields about \$1,000 per ton, several shipments of which have passed through the city for transmission to Swansea.

## Nevada County.

From the Gazette of Jan. 5th: We learn from a gentleman down yesterday from You Bet, that Brown & Co., on Brown's Hill, cleaned up, on Sunday last, \$1,185 from five days' run of their mill. From the same we learn that Mallory & Company are doing first rate in their claims, adjoining Brown's.

A correspondent of the Grass Valley National, writing from You Bet, Dec. 27th, says: None of the cement mills are paying very largely at the present time. There are but few of them but what are paying more than expenses, and some of them have flattering prospects for good dividends soon. Messrs. Cozzins & Garber, who have been so unfortunate of late, have suspended working their cement mine at present. While drifting under the bed of Missouri Cañon, they had a cave, which extended to the surface and let in so much water that with their present machinery they are unable to pump it out.

The Chalk Mountain Blue Gravel Co., claiming several miles on what is supposed to be an ancient blue gravel channel, started an incline which they expected to have to run from 600 to 700 feet to strike the river bed, but through some miscalculation they struck it some 600 feet nearer the surface than was expected. They talk of moving farther up their claims to a more favorable location for opening up their mines.

The mills at Hunt's Hill are running, are crushing excellent cement, and are making good profits.

The Green Mountain Company, situated between Hunt's Hill and Quaker Hill, have had a very tedious time getting their mine open, and have been at a great expense. They have struck very rich gravel, and the mill is now paying well.

From the Transcript of Jan. 5th: The year 1867 opens auspiciously for Nevada county. The heavy storms of December, though they did much damage, brought their good. The tailings have been swept out of the ravines and gulches, and the hydraulic miner has a chance to lay his sluices with sufficient fall to wash the gold. The reservoirs are full, and in many localities there is an abundant supply of free water for the miners. Quartz mines are paying well. The cement mines of Little York township still continue to yield handsomely, and there is no longer a scarcity of water to keep the mills going. Hydraulic claims are being opened in every part of the county, and an immense amount of this kind of mining will be done during the year.

We learn that John Baldwin picked up a quartz specimen in a ravine on Gold Flat, on Monday last, worth between fifteen and twenty dollars.

EXCELSIOR.—From the Nevada Gazette of Jan 7th: The U. S. Grant Company have been the most successful of the mining companies carrying on operations in Meadow Lake district during the past season. The claim is on the Ohio ledge. The ledge is five and a half feet in width. The mill has five stamps of 500 pounds each, and the capacity of the mill is seven tons a day. The number of tons reduced up to the present time is 271, and the gross yield \$13,398.57—being within a fraction of \$50 a ton. The cost of mining and hauling the rock is \$5.50 a ton, and the expense of crushing \$3.50, leaving a profit of \$40 a ton. Twenty men, on an average, are employed in the mill and mine. A 15-stamp mill will be erected in the Spring.

The Transcript of Jan. 6th says a bar of gold valued at between \$1,200 and \$1,300, the result of one week's run of the U. S. Grant mill, was brought down on Friday.

From the Meadow Lake Sun of Dec. 20th: The report of the Superintendent of the Mohawk and Montreal Company shows that 163 tons of ore had been crushed at the Winton mill, with an average yield of \$29.35 per ton.

Judge Tilford, who has retired from the editorial chair of the Meadow Lake Sun,

has just returned, says the Gold Hill News, of Jan. 3d, to Virginia. He reports the snow eight feet deep on the level at Meadow Lake, and the people housed up for the winter. Many of the mines, however, are being vigorously worked. The Golden Eagle Company will have their mill running within ten days. The company have out a large amount of splendid ore, free gold being visible to the naked eye in all of it. The U. S. Grant Co. keep their mill running all the time. The ore yields from \$50 to \$80 per ton on the average. The California Co. have succeeded in getting all their matters straightened out, and work is being pushed forward; the stock, which two months since was not worth more than \$2 per share, is now worth \$15. The Mohawk Co. except to have their mill in running order within a few weeks. The Enterprise mill, erected on the Enterprise mine, by Goss & Lambard, has been crushed in by the snow, and the whole concern has gone to wreck.

## Placer County.

From the Stars and Stripes of January 2d: Captain Mallett has purchased a half interest in the Badger company's claims and ground, located at the head of Badger ravine, near Gold Hill, for the sum of \$3,000 cash, and is to erect and have a mill running on the same by the first of February. All the ravines heading in the ridge west of Auburn, which ridge extends a distance of about eleven miles to the plains below, have furnished rich surface diggings in the past, and the cement formation, which is very extensive, has invariably paid well for the time and capital employed in working it.

From the Dutch Flat Enquirer of January 2d: The mines in the vicinity of Gold Run, we learn, are yielding larger returns this season than at any former time.

From the Placer Herald of January 5th: Captain Mallett has already purchased his mill, and will have it running in thirty or forty days.

Some of the mine owners about Forest Hill and Yankee Jim are proposing to hire Chinese to work their claims. We learn that an indignation meeting was held at the "Hill" on Saturday evening last.

## Sierra County.

From the Messenger of January 5th: The Good Hope are still working their ledge with a view of securing a heavier back. There is a rumor that they will put up a mill in the spring. . . . The Montpelier company are, pending the completion of their tunnel, at work clearing out the old working of the Wheeler ledge—part of their purchase—with a view of sinking down, if practicable. . . . Anderson & Co., who have been working Slug Canon, near Cowdery's quartz mill, took out, a few days since, a slug that weighed seventy-five dollars. . . . Cunningham & Co. are preparing to flume Slug Canon, near the old saw mill, and are busily at work constructing a dam and putting in boxes. . . . We hear that at Eureka, Morris-town and other hydraulic diggings throughout the county, water is plentiful, and miners are jubilant with pipe and pick. A few weeks of water now, insures success in the spring. . . . A new quartz ledge has been discovered near Indian Hill, which abounds well in free gold.

The Slug Canon mill has been entirely remodeled. It was started on New Year's day to test its working, and everything went to a charm. It has five stamps, and will crush from six to eight tons of quartz per day. Eight men are employed in the mine and mill.

Letter to same paper from Howland Flat says: A fair amount of gold is being produced—more than usual for the time of year. The different mining companies are doing very well. The Union, Down East, and Mountaineer companies are reputed to be in a thriving condition, while other companies are paying fairly. The Hawkeye company are nearly opened again, as before, while their new tunnel is going on rapidly from the Howland Flat side. This new tunnel is named the El Dorado. The tunnel of the Monumental company is still being driven along. The rock, which has been hard for a very long time, shows signs of changing. The Pittsburg company are employing the same number of hands as usual—about forty-five. The suspension was only for two days.

Letter from Indian Hill: Jones & Co. have fitted up in good style the old Gregg claims that have lain idle for the last seven years. . . . Charlton & Co. have added six hundred feet of pipe and a second distributor. Their claims have already yielded about ninety thousand dollars. During the late storm a land slide did them some \$300 damage. . . . Andrews & Co. have run a tunnel about three hundred feet. . . . Bliss & Co. have got some good prospects at the east end of the town. . . . The ditch agent, while out during the late storm, discovered some very rich quartz. A few ounces pounded in a hand-

mortar and panned out in a saucer, gave a product good for \$200 per ton. The discovery was made on the north fork of Indian Creek.

Letter from Pine Grove, December 25th: Snow four feet deep, and still coming down with that wild fury peculiar only to a Sierra snow storm. All outside business suspended. Tunnel mining being pushed ahead with vigor, yielding the usual good results.

## Siskiyou County.

A dispatch, dated Yreka, Jan. 3d, says: The weather for the past three weeks has been very stormy, especially in the mountains, where snow has fallen to a great depth. Scott and Klamath rivers have been so high as to stop stages. Mining on the bars has been suspended for the present. Accounts from all the mining districts show that the miners have plenty of water, with a fair prospect of a good clean up in the spring. The snow on Scott Mountain is from twelve to fifteen feet deep.

## Yuba County.

From the Marysville Appeal of Jan. 3d: On New Year's day, at one o'clock in the afternoon, the 100-horse engine was started and all the machinery—16-stamp battery, 10-inch pump, carriages for lifting ore, two Chile mills, etc., etc.—moved off to the entire satisfaction of all. The company have about 150 tons of rock on the surface. The mill will crush about thirty-five tons per day, which yields \$16 to \$45 per ton.

The Bateman Company, of Indiana Ranch district, has struck a very rich rock. This company has been taking out good pay rock for some time, and hauling it to the mill of Templar No. 2 to be crushed. The last strike appears to be better than ever.

From the North Californian of Jan. 7th: The works of the Unconditional Union Company are twelve miles from Oroville, and two and one-half miles south of the La Porte road. The claims embrace 4,000 feet on two ledges. Shafts have been sunk for prospecting 2,000 feet, and a tunnel is now within a few weeks of completion, which will tap both ledges at a depth of 300 feet below the surface. Through this tunnel the quartz can be delivered at the mill for sixty cents per ton.

## NEVADA.

## Esmeralda—

A letter to the Territorial Enterprise from Wilson district, dated Pine Grove, Jan. 1st, has the following items: Work on the mill is now going ahead with all reasonable dispatch. I am informed by one of the proprietors that in five weeks from the day the last load of machinery arrives, (which will probably be this week), the steam whistle will startle the Piutes of Wilson district. Part of an arastra mill has been brought in and the rest will soon be here. This mill, it is said, will be in operation within twenty days. A number of arastras will also be in operation in a short time.

On several of the mines operations have commenced in good earnest. The Wilson and Midas Companies, on the Hinalaya and other parallel ledges, have started a joint tunnel to prospect their claims. This tunnel will be run with all possible dispatch. The Wheeler Company, on the Mastodon ledge, are now at work in the old shaft, and are down fifteen or eighteen feet. To-day, I visited the Wheeler mine, and saw the richest rock yet found in this district. Out of each tubful raised while we were there, it was almost impossible to find a piece of rock which did not show free gold. As the shaft goes down the rock improves and the ledge is better defined. On the Hamilton ledge a contract has been let by the Hamilton and Forrest Companies, to sink a shaft twenty-five feet, and the contractor is now busy at work. Other companies will soon begin operations.

## Reese River—

From the Reville of Dec. 27th: A. T. Gould has received one-half of the southern location on the Keystone ledge. He has two shifts engaged in taking out ore, and expects to keep the mill of the Consolidated Company in full work.

Prof. Everett has sunk to the depth of fifteen feet on the Hunter mine, and exposed a fine body of ore fully fifteen feet wide.

The New York and Social Company, in Egan Canon, have had their mill running for a week. The principally developed ledge of the company, the Gilligan, is being worked again, and is yielding as fine ore as of old.

From same of 29th: The Morgan and Muncey is being put in fine condition. At the greatest depth of the incline the vein displays handsome mineral of a remarkably compact body, and blushes all over with tints of ruby. Preparations are being made to stoop from the lower level. . . . We learn that a complete 5-stamp mill will be taken to the Reville district immediately, where it will be erected and put to crushing ore. . . . The Keystone mill will close this evening for necessary repairs. After being thor-



oughly overhauled, it will resume operations about the 15th of January.

In Mammoth district, the Mount Vernon Company are continuing their work both upon shaft and tunnel with very satisfactory results, having struck a ledge of rich ore in the shaft of about twenty-five feet in thickness. The owners of the Uncle Sam group have made arrangements with the superintendent of the Knickerbocker mill at Lone to work about one hundred and fifty tons of their rock, which they have commenced getting out. Ferguson & Co. are still at work on the American Flag, the ledge increasing in width and the quartz in richness as they descend. They are down with the shaft about one hundred and fifteen feet, showing a ledge about six feet wide. They intend soon to start a drift, and also to continue the shaft for thirty or forty feet yet. The Superintendent of the Ural Silver Mining Company, C. E. Gillet, has been having rock worked from several of the ledges in this district—the Ural, Gould & Curry, Albany, Kearsarge and Robinson, among the number—all of which "work" at figures that will pay even from the surface with a good mill near by; the figures being from \$60 to \$100 per ton in silver.

From same of January 2d: The new mill of the Combination Company, just completed in the Hot Creek district, commenced crushing ore on the morning of the 27th ult.

Some 650 pounds of bullion were brought into town yesterday from the mill of the Twin River Company.

#### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Jan. 1st: Thomas Farrell has brought an action to recover mining ground and \$500,000 damages from the Savage Company. The ground claimed is a portion of the front ledge, just east of the Comstock, known as the Mitchell lode, and includes six hundred feet, extending north from the Hale & Norcross north line.

From same of 5th: The damages caused by the flood in Carson river, to the dams, etc., a couple of weeks ago, are now repaired, and all the mills in the vicinity of Dayton are in full operation crushing ore from the old Comstock.

Same of 6th: The new shaft of the Imperial and Empire companies has now attained a depth of 750 feet, and the work of sinking deeper is being actively prosecuted.

At Edwards & Wiegand's assay office, Gold Hill, yesterday, was a pile of twenty-seven silver bars, worth about \$40,000; all from the Crown Point mine. The crude bullion used in the manufacture of these bricks, when brought to the office, weighed three-quarters of a ton.

We present the following report of bullion shipped from the office of Wells, Fargo & Co., in this city, during the past year of 1866, just merely to give some idea of the vast amount of wealth produced from the great Comstock lode. This is independent of what is shipped from their office at Gold Hill or anywhere else:

January.....	\$520,177 20
February.....	492,322 91
March.....	705,210 33
April.....	646,387 90
May.....	618,776 71
June.....	562,938 70
July.....	595,503 77
August.....	779,276 50
September.....	643,963 97
October.....	586,517 25
November.....	730,512 30
December.....	786,438 98

Total.....\$7,807,616 18

From the *Gold Hill News* of Dec. 24th: The Petaluma mill is almost ready to commence running. The batteries, four in number, with four 700-pound stamps, are built in the most improved style, and in the most substantial manner. The pans are of the Wheeler pattern, but much larger than ordinary. There are eight, and it is calculated they will work thirty tons every twenty-four hours.

From same of Jan. 4th: Yesterday we were down to see the Savage works, at what is known as the Curtis shaft. The new 250-horse power engine pump is in full operation, and a more complete engine and machinery we have never seen any place than this. The machinery works perfectly noiseless, while in the gearing a wooden wheel works against an iron one, making the thing perfectly quiet.

For over two weeks the roads have been so miry that it has been impossible to deliver the ore at the mills. Many of the teams have hauled off, while those that are at work cannot deliver more than half the amount they could if the roads were in good condition. Many of the mills are lying idle for want of ore, while many of the mines have been compelled to suspend

operations for want of dumping room for the ore that is being taken out. This is the cause of the deficiency in our shipments. The mines of the Comstock ledge never looked more promising than they do at the present time, nor have they ever yielded more paying ore than now. At the Savage there is in the new dumps at the present time 2,000 tons of first-class ore, which will give a yield of not less than \$80,000 to say the least of it. In fact all the mines where pay ore is being taken out is in the same condition.

From the *Virginia Union* of Jan. 2d: At this time there is fifty tons of first-class ore at the Yellow Jacket new works awaiting shipment. It assays from \$400 to \$500 per ton....The Petaluma mill started up yesterday on the Savage ore.

From same of 4th: We learn that there have recently been a number of rich ledges located beyond and to the east of Death Valley and in the Black Mountains. We were shown some of the ore. Horn silver is plentiful in it, and the entire quartz abounds in sulphurets. The ledges are from eight to thirty feet in width, and crop out prominently, being traceable for a long distance on the mountain side. The region is excellently watered and wooded.

A telegram from Gold Hill, Jan. 8th, says: The Yellow Jacket north mine opened into a new body of ore to-day, 140 feet east of that on the level above. It looks fine.

#### ARIZONA.

From the *Miner* of Dec. 15th: The ore from the Ticonderoga mine in Goodwin district, near Big Bug, is being worked at Woolsey's mill, yielding from \$50 to \$100 per ton. The lead is about seven feet wide.

Our favored mine the Sterling, now promises wealth and happiness to its lucky owners. No mine in Nevada nor California has ever surpassed it in product or prospects. Since the last clean-up a most thorough and careful examination of the mine has been made by competent and experienced men, with the most satisfactory results. If Uncle Samuel or some other human power will exterminate our infernal redskins, so that men can come here safely, we may look for times well remembered in Nevada in '61-2 and 3. No such prospects were then known in that State, nor do we believe there is a place on the Pacific coast that promises so well for mining as this section of Arizona at this moment.

In the neighborhood of the Sterling are several other mines, known and proved to be very rich and reliable. The Mucella and Umpqua are both being worked, and have exceeded the expectations of their owners.

The *La Paz Gazette* of Dec. 13th, says that Noyes' 10-stamp mill had arrived from Fort Yuma a few days previous.

#### BRITISH COLUMBIA,

Victoria dates to Jan. 5th: Mr. Jerrold, with a party of eight, arrived last week from Big Bend. There are between fifty and sixty persons wintering on French Creek. The weather was not severe when Mr. Jerrold left, and snow lay to the depth of two feet. Gold Hill claim, on this creek, excites considerable interest, and more confidence is felt in its richness. A mining company has been organized to prospect ground in the rear of this claim. Five men were at work on Discovery claim, making two or three ounces per day rocking their dirt. Three other companies in the creek are at work with satisfactory results. In McCulloch's Creek three companies are at work.

Parties from Cariboo report most companies doing well on William's Creek. The Taylor claim has prospects of ten dollars to the pan. The Grouse Creek claims are doing well. Low Creek is also improving. Canon and Cedar Creeks are being thoroughly prospected; much enthusiasm is felt in the result. About 1,000 persons are wintering in and about Cariboo.

A valuable coal seam has been discovered within twenty miles from Victoria.

The prospects for working the Bellingham Bay coal mines are improving. A new pump has been erected.

#### COLORADO.

From the *Journal* of Dec. 18th: G. H. Sabin is starting up on the Union Company's claim, on the Bates....G. R. Mitchell is fitting up the mill erected by Mr. Tobin, for crushing ore from the Alps....Yesterday hands were put on the Consolidated Gregory's claim. The company will soon be in full blast....Truman Whitcomb, of Nevada, is running his 12-stamp mill on ore from the California lode. The ore appears to be rich....Lyon's Furnace Company have a nice lot of tailings matted. They are running but one furnace, and one desulphurizer at present....J. D. Pergrine's new 24-stamp mill is being pushed rapidly towards completion, and is situated

immediately below Lyon's furnace....The Ophir Company are fixing up their railway and putting on new cars. They are also erecting a new building to cover the lode. They are also about putting in a new engine for hoisting, together with a pump....The Briggs Company commenced this morning on the Gregory. The mill will not be set going at present....Mr. Vissing is operating the Monnier process, in the mill erected by Mr. Fink. He has commenced desulphurizing....The Smith & Parmelee Company have struck very rich pay on the west end of their mine. They are running the 25-stamp mill; the Empire mill, eighteen stamps, and the Fitzpatrick mill of eight stamps....We were handed a fine specimen taken from the Waterloo lode, Idaho district. At a depth of thirty-three feet the crevice is said to be four feet between walls.

The Sonora company have drifted into a crevice in the Agnes lode 100 feet, and have a vein of \$70 ore. They are well supplied with means for a winter's campaign. In Georgetown, Smith & Herriek have nearly completed their furnace. The Washington Company have commenced to erect large smelting works.

From the *Denver News* of Dec. 19th: A specimen from the Summit lode, Georgetown, gave by assay \$2,000 per ton.

Hoyt, Wideuer & Co. have just struck a solid mass or concentration of quartz veins, some 300 feet in width, on James' Creek. The rock is rich in gold, silver and lead, and is one of the finest smelting ores in Colorado. This lead is to be worked by the Aetna Tunnel Company.

The Sterling mill is crushing Bobtail ore worth from \$150 to \$200 per cord....Hale & Co. are opening the Aetna lead just below. They have run in some 150 feet....The 60-stamp Black Hawk mill is running on Gregory ore. Twenty stamps will soon be added....The Briggs Company are hoisting water, preparatory to resuming operations....The Consolidated Gregory will resume full work as soon as the lower level is drained.

Five mills are now running at Empire, and turning out from two to five thousand dollars per week. Mr. Leeper's mill, with the Keith process, has not yet got down to steady work, but soon will. His works are very complete.

In the neighborhood of Georgetown, some very rich silver discoveries have recently been made, and there is a good deal of excitement about them.

A good deal of gold washing is being done all along Clear Creek, and with satisfactory results. The water has got down low, so that miners can get down into the bars, from which they were barred out all summer.

#### IDAHO.

From the *Avalanche* of Dec. 22d: In the Woodstock, the prospects are gratifying. Two lots of ore crushed in the Wehfoot mill, paid something over expenses. The ledge has been so far opened that a ton of ore is extracted daily. We were shown several pounds of it on Wednesday, and it all shows rich in sulphurets of silver and much free gold. The lowest depth is twenty-seven feet. A tunnel has been started and ore will be taken out all winter. The vein has every appearance of being a true one, and is now two and one-half feet thick.

The Shoebar mill is to start this morning. All things were in readiness yesterday and the whistle that has been silent for just a year will be heard again. Lots of ore from the Silver Cord, Dashaway, Whisky Gulch, and probably from the Vulcan, will be crushed.

The Reuter & Johnson ledge is paying wages right along. The ore is worked in an arastra. As stated months ago, these men patiently prospected many months for this ledge and paid their way by working float quartz in a hand mortar.

The Reynolds Creek Coal Company is sanguine of finding coal in paying quantities. The tunnel now reaches into the hill over two hundred feet, and is being pushed forward. Timbers are provided for a full winter's work, and the company is determined to find coal in a large body or spend much money and labor trying.

From the *Times* of Dec. 11th: "The mining in the creek has not altogether been suspended as yet, notwithstanding the cold weather. Several companies are yet at work, and innumerable rockers are telling every day upon the resources of this country. We have heard very little of late from the company formed for the purpose of putting a bedrock flume in More's Creek. A large number of miners in the immediate vicinity of Idaho City and Buena Vista Bar are engaged in drifting out pay dirt, and the winter and early spring promise to be unusually lively in the way of mining."

#### MONTANA.

From the *Post* of Dec. 15th: Ten pounds of ore from the Copperopolis lead in Vi-

vian county, assayed 33 per cent. of pure copper, and yielded gold at the rate of \$40 per ton, and silver at the rate of \$600 per ton.

The Midas Company, which is largely engaged in mining operations in Nevada, and owns one mill containing eighty stamps, is permanently located in the Hot Spring district. Professor Ward is superintendent, and has erected several buildings, including a fine one for an engine and machinery. A large number of workmen are employed by this company in extracting quartz, which will be crushed during the winter.

There has been considerable excitement created over the discovery of the dry gulches around Indian Creek, and from what we can learn from parties who have visited the section, the mines bid fair. A ditch some five miles in length is being brought in by Messrs. Coover & Thompson.

Helena items: Trinity Gulch was discovered on Dec. 1st, near "Lost Horse." It prospects from fifteen to sixty-five cents to the pan....Postlethwaite & Co. have erected a 24-stamp mill, at a cost of \$40,000....Heald & Front have an exceedingly rich lead about half a mile above the intersection of the Rattlesnake and New York gulches. Two tons of ore yielded \$311. The shaft is thirty-five feet deep. The ore is worked in an arastra....Judge L. G. Turnley's mill cleaned up from a four day's run of fifty-five tons of Whitelatch Union ore, \$3,708, with two stamps hanging up. Unfortunately the breaking of several stamps compelled the machinery to stop.

Letter to same paper from Red Mountain, Highland Gulch, says: We have here two very rich leads lately discovered, the Ballarat and the Evans. There are but two claims being worked at present in the gulch, and they belong to Mansfield and Heifner. The first takes out about \$2,000 per week, the latter about \$1,400. When the work stopped in the gulch, the miners were averaging from \$20 to \$100 per day.

George Aitkin, engineer of the Montana Mining and Prospecting Company, reports most favorably of the veins recently examined by him. We quote from the *Brooklyn Union*: "The Toledo, Alameda, Mother Hendricks and Uncle Tom are equal, by common mill process, in free gold, to \$100 per ton. These lodes will now command \$5,000 per claim. On the Alameda, at the Seneca Falls mill, I worked seven thousand pounds, by weight, took up clean gold \$360, and could not save half of it by the old way of running it on copper plates. It is now \$20,000 per claim of 200 feet."

Mr. Cope's mill in Hot Spring district, has been running for two months. Some 200 tons from various lodes during that time have yielded about \$10,500.

#### OREGON.

Jacksonville news of January 4th, is to the effect that gold has been again struck in the celebrated Ish or Gold Hill lead, and the prospects are very flattering.

IMPROVEMENT IN THE REFINING OF GOLD AND SILVER.—Andrew Mason, melter and refiner in the New York assay office, has made an improvement in the mode of parting gold and silver, which is to be introduced into all the branch mints. It consists in so adjusting the metals for granulation that the pure gold, instead of gold bullion, shall constitute one-third of the mixed metal; and secondly, in boiling the gold in sulphuric acid, after one treatment in nitric acid. The one charge of nitric acid is to be made larger than the first in the old process, but 20 per cent. less than the amount in both, while the consumption of fuel is greatly reduced, and much disagreeable labor removed. It is estimated that the saving in one year's business would amount to \$70,000, rating the cost of mining in California at 50 per cent. greater than in New York. The economy in the above mode of parting, consists in the employment of a less quantity of nitric acid than has heretofore been used, which is replaced by sulphuric acid—the latter costing only about one-third as much as the former.

IRON IN SANTA CRUZ COUNTY.—The Santa Cruz *Sentinel* of the 22d of December says an extensive bed of iron ore has been discovered a few miles north of that place, near the beach. Wood and water are plenty, and it is spoken of as a good chance to invest.

TWO HUNDRED and twenty millions pounds of paper is used every year in England. The United States consumes four hundred and forty millions of pounds.



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W. B. EWER,.....SENIOR EDITOR.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

**Mr. Thomas Starr** is Agent for the MINING and SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 11th, 1867.

**Mr. L. W. Felton**, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

**Mr. S. D. Whitaker**, is our authorized Traveling Agent and Solicitor from this date. Jan. 1, 1867.

## San Francisco:

Saturday Morning, Jan. 12, 1867.

## NOTICES TO CORRESPONDENTS.

"PATRIOT"—OUR ORNAMENTAL AND ORDINARY BUILDING MATERIALS.—Your suggestion is an excellent one. A complete series of these objects ought to be obtained and forwarded to the Paris Exposition, in order to exhibit our resources in this respect. To the intending, prudent emigrant, scarcely any subject will be more eagerly sought after. Specimens of our useful and ornamental woods ought to form one department. Another and highly interesting one, should consist of assorted specimens of our different rocks, suitable for the purposes alluded to—cubic specimens of about three inches cube—one or more sides being polished would suffice for purposes of illustration. For the better carrying out this idea, we submit the following brief notices of some of the principal articles which might be furnished:

**Granite**—The Folsom quarries afford granite susceptible of the highest polish. Other varieties could be furnished from various quarters.

**Porphyry**—Nevada State and the southeastern parts of California, can furnish excellent specimens of porphyry.

**Marble—Ordinary and Hydraulic Limestones**.—Tuolumne, Santa Cruz, and other counties, can furnish abundance of these calcareous materials.

**Verde Antique—Serpentine**.—San Francisco, Calaveras, Mariposa, and many other counties, can supply admirable specimens of these varieties of ornamental building stones.

**Jasper**.—Judging from what is seen on the coast hills forming the southwestern border of San Francisco county, it is highly probable that this durable and beautiful substance, hitherto obtainable only in limited quantities, chiefly from Siberia and Russia, is now procured to almost any required extent at St. Gervais, in Savoy, where the quarry has a surface of at least 24,000 square yards, and a depth of about twenty-two yards. It is a variety of quartz, which is characterized by being opaque, however thin the plates into which it may be cut, and is of various colors—red, brown, green, etc.; that at present used for jewelry being green, with red spots, commonly known by the name of blood-stone. It resists for indefinite periods the action of the weather, and is an excellent material for ornamentation, whether as stands for small objects, etc., or as panels, columns, etc., to be used by the architect. Some of what is found at St. Gervais bears close resemblance to the beautiful species termed *rouge antique*; it is of a fine red, and without veins. There are many reasons for anticipating that California will be found equally, if not more abundantly furnished with this substance, than either the Urals, Siberia or Savoy. Prof. Rowlandson, in his articles which have appeared in this paper on the "Age of Gold-Bearing Rocks," has made pointed allusion to the similarly jaspitious character of the auriferous district of the Urals, with many parts of California, and the marked similarity of geological appearances between this State and that portion of northern Italy comprising Savoy.

**Steatite**.—Is another substance of which California can furnish an abundance of splendid specimens.

Almost the whole of the above articles would make a beautiful appearance, if converted into small polished vases, tazzas, or other elegant forms.

**Clays**.—Suitable for making ordinary and fire-bricks, ought not to be omitted—the former comes home to almost every man, and the latter is a great commercial and manufacturing need.

"S. T."—ATMOSPHERIC PERCUSSION ENGINES have long been known. The first published account of an air-gun is to be found in the *Elemens d' Artillerie*, of David Rivaud, who was preceptor to Louis XIII. He ascribes the invention to Marin, of Lisieux, who presented one to Henry IV. of France.

## MINING PROSPECTS FOR 1867.

The new year opens auspiciously for the mining interests of the Pacific coast. The abundance of snow which has fallen in the higher Sierras must insure a full supply of water for the ditches throughout another year, to which source, almost exclusively, the placer miners now look for the means of carrying on their operations during the long, dry months of summer. The idea that our placer mines are soon to become exhausted, has now been pretty well exploded. The developments of the past three or four years have pretty fully established the fact, that what is known as "ancient river beds," constitutes by far the largest portion of the riches of our placers. This ancient drift is far more extensive than was originally supposed, and is now found to cover a large portion of the area of all the central counties of the State. Instead of being confined to mere ancient *river beds*, it is more than probable that it once covered almost the entire of what is now the western flank of the Sierras, and that the chief portion of the gold in our present rivers and gulches must have been derived from that ancient drift, to the origin and source of which no clue has yet been discovered. So vast and extensive is this deposit, that it must furnish employment for generations to come.

The placer developments about Folsom, the past season, appear to indicate that even another drift, more ancient, perhaps, than that already alluded to, and presenting quite different characteristics, has been discovered. At that place, we are told that the miners have worked down to what they supposed to be the true bedrock—a rock presenting the same characteristics, for a radius of about ten miles around. During the past summer, some ambitious miner has penetrated this rock, and found beneath it a very valuable deposit of gold-bearing drift, made up entirely of quartz gravel and rock. The gold taken out appears to be but little water-worn, quite different from that found in the old river beds, higher up in the mountains. The deposit is considerably lower than the bed of the American river. Quite a number of companies are now working on this new deposit, with very good success. The belief prevails among the miners about Folsom that this unexpected discovery will lead to most important results, greatly enlarging the field of mining operations in the foot-hills. The deposit covering this gold is of marine origin, containing numerous shells, and showing that since the gold found its way there, the country has been depressed beneath the flow of the ocean, from which it has again arisen to its present elevation.

The experience of the past few years has pretty fully shown that all the more valuable portions of our ancient gravel deposits will pay for crushing—a more tedious and expensive manner of extracting their auriferous contents than that of obtaining the gold by sluicing; but yet one which gives such increased results as to more than pay the extra expense attending it. The machine requirements for this process, also, furnishes a large amount of work for mechanics and foundrymen.

Our quartz interests were never more prosperous than at the present time. Speculative mining is fast giving place to legitimate operations. The general success attending it is fast implanting a degree of confidence in the minds of capitalists which is most hopeful for the future. One of the most interesting and significant features with regard to quartz mining operations, especially in this State, is the almost or quite universal success which has attended deep sinking. Not a single instance of failure has come within our notice, when a depth of four or five hundred feet has been attained; on the contrary, we have heard of several cases where mines which were abandoned, in years past, because they would not pay at a depth of two hundred or two

hundred and fifty feet, have recently been re-entered and sunk to twice that depth, with most encouraging results.

Improved machinery; more skillful management, assisted by better skilled labor; increased facilities for travel and transportation, and a consequent decrease in the cost of living, are all contributing, by cheapening the cost of working, to bring into value mines which heretofore could not be worked on account of the lack of these facilities. On the whole, no year has opened with more flattering prospects for the miner than the present.

## THE NEW LETTERS PATENT.

The printing of the "Letters Patent" is now in full operation, and one of the earliest issues is before us. The reduced size of the sheet is a great improvement, as well as the method of folding and securing the several parts together. The typography and general style is excellent, with the exception of a lack of margin, which might be remedied by a slight increase in the size of the sheet. The design of the *vignette* is very beautiful. The prominent central figure represents the Goddess of Liberty, grasping the Stars and Stripes in her right hand, while in her left she holds a wreath. At her feet crouches the American Eagle, with an olive branch in its talons. Upon either side is seen the Roman *fascies*, emblematic of authority. Upon the left of the picture, and in the foreground, is seen a female figure with cards and spinning wheel, while just in the rear, a large carding machine stands prominently out, showing by the contrast the vast stride which has been effected by modern invention over the slow and tedious process with which, from the time that Abel tended his flocks, down to near the present century, the great labor of preparing "clothing for the million" has been attended. Still further to the left is seen a sheet of water, bearing upon its bosom a steamer approaching its dock; while in the distance is also seen a great city, with its warehouses, workshops, tall chimneys, spires, etc. Upon the right foreground is seen a field of grain, ripe for the harvest, while a laborer has stopped short in his work, resting his sickle upon his shoulder, and gazing in apparent astonishment at a modern mowing machine, which comes galloping towards him, cutting its broad, clean swath, and accomplishing more in an hour than he, with his sickle, could accomplish in days. Still further in the rear is seen a locomotive, with its train of cars just emerging from a tunnel through the mountains; while the telegraph, that miracle of modern invention, is seen stretching out its attenuated wires from pole to pole—the great highway of thought and annihilator of time and space. The background of the whole is neatly shaded with hill, dale and mountain, beyond and above which the fleeting clouds swim in their aerial ocean. Mr. Theaker has accomplished much in every way, in improving the business and general arrangement of the Patent Office since he has been at its head, not the least of which is the desirable change which has been effected in the issue and "make-up" of the "Letters Patent."

**ANGULAR PADDLE WHEEL**.—We understand that the patentees have disposed of the United States Patent to a company of Eastern capitalists for a large consideration, and that immediate steps will be taken to develop the maximum advantages of the new theory on the North River.

**PERSONAL**.—The numerous friends of Dr. J. Macgowan, may be interested to learn that he, with his family and fellow-passengers, arrived safely at Hongkong on the 4th of November, after a pleasant passage of forty-four days from this port.

**COMMUNICATIONS RECEIVED**.—From A. W. Arents, a description of a supposed new mineral; from J. Mosheimer, some further account of "Rittinger's Funnel or Pointed Boxes," together with a notice of the distinguished mining engineer, whose name they bear.

## ENSLEY'S NEW PATENT GAS.

We made a brief mention of this new illuminating gas in our issue of two weeks ago, since which time we have received a call from Mr. J. M. Whitesides, who has secured the patent right for its manufacture on the Pacific coast. The first introduction of this gas was made at Komoku, Canada West, where it has created quite a sensation among scientific men and others, to whom its character and mode of production has been made known. Numerous individuals, scientific and practical, have visited the works, to see for themselves that of which they had heard. The editors of several of the leading Canadian journals have also either visited the works in person, or sent thither special reporters; all of whom, so far as we have been able to learn, have expressed the most entire satisfaction at the success of the invention.

A more extensive trial of the gas has since been made in the city of Detroit, Michigan, where works on a large scale have been erected, and on the 27th of July last, the Hall of the Board of Trade of that city was beautifully illuminated, the light being declared by all present equal to that of the best coal gas. The latest exhibition of this gas has been made at the town of Coburg, Canada West, a city of 5,000 inhabitants, where it has been substituted for the ordinary coal gas, which has been made there for the past ten years. The papers in that city and vicinity have given very extended notices of it, pronouncing it a perfect success. The test of practical success thus seems to have established this as one of the most important inventions of this age of scientific discovery. We understand that an experimental trial of the same will soon be made in this city, and elsewhere on the Pacific coast.

The merits of the invention consists in the economy of the manufacture, the cheapness with which the works can be constructed, the facility with which existing works can be altered for the production of the new gas, and the quality of the light and the facility with which it may be introduced into small towns, manufactories, public buildings, etc. The material used in the manufacture is green pinewood and bones, and other animal refuse. The works at Komoku, which are merely intended to illuminate a single building, a seminary of learning, have cost only \$500, including a gasometer of a capacity of 600 cubic feet. It is claimed that the total cost of manufacture may be entirely defrayed by the residuum of the manufacture, which consists of charcoal, bone-black, tar, and oil of turpentine.

The gas requires no purification whatever, but passes directly from the retorts, through the condenser into the gasometer, for general distribution. At the point of its exit from the condenser, a trial light is kept constantly burning, by which the director of the works can always see, from hour to hour, just the character of gas he is producing, the properties of which, if at any moment it falls below the requisite standard, can be almost instantly regulated by an increased addition to the retorts, of wood or animal matter, as may be needed.

Common cylindrical retorts are used, which are fed by a simple and ingenious contrivance, which makes their action almost continuous. A common wheelbarrow full of wood, with about one-third the quantity of animal refuse, will produce an average of about 460 feet of gas. The matter is placed in separate retorts, and about one hour and a half is required to extract the gas from the charge. The process of the manufacture is the same as that employed in making ordinary gas, with the exception of the apparatus required for purification, which in this gas is entirely dispensed with.

**CONCENTRATORS**.—H. J. Booth & Co., of the Union Foundry, during the past week have forwarded two of Hendy's latest improved concentrators to the Gold Hill mill, and one to the Houston mill, in Grass Valley.



## THE MISSION OF STEAM.

It is difficult, at a glance, to form more than a mere approximate idea of what steam has done, or may yet accomplish, toward both the moral and physical elevation of the human race. Scarce two generations have passed away since a celebrated philosopher foretold that this agent, which was then quite limited in its application, would at an early day result in an important elevation of man in the scale of society, by being employed to do the chief part of his drudgery; leaving himself to perform skilled labor alone, and consequently to the more uninterrupted exercise of intellectual employment. The fulfillment of this prophesy has been brought about at a much earlier day than could have been anticipated, even by the far-reaching intellect which could at that time have conceived of such an idea. Had it not have been for steam, the whole civilized world might at this time have been but little in advance of China and Japan, in the arts and sciences, and in all those mechanical appliances which distinguish civilized from savage life. Even the harmonizing and elevating tendencies of the Christian religion would have been perverted and made of little effect, had it not been for the intellectual development which has been brought about, either directly or indirectly, by the introduction and varied application of steam. This wonder-working agent has created a demand for skilled labor, which could have been called into exercise in no other supposable manner. This labor has, in turn, induced an intellectual employment, profound, analytic and practical, which has so elevated and enlightened the masses as to place them beyond the reach of that priestcraft and kingcraft, which, during the middle ages, had so turned back the tide of human progress that it was fast verging upon original barbarism.

Skilled labor is in every way elevating in its tendencies. It is an active, thinking, progressive reality. Whether we contemplate it in an intellectual or a utilitarian point of view, it has a growing desire for improvement. It creates a thirst for general knowledge, on the one hand, while on the other it manifests a ceaseless activity in devising new ways and means for substituting mechanical appliances, wherever labor and force are still employed. Aided by mathematical science, it has of late years been surprised and stimulated by its own success, until it seems to think there is no conceivable problem beyond its power, except breathing into the creations of its own ingenuity the breath of life.

The skilled labor of the present day is a very different thing from that which flourished, to a limited extent, only, at the dawn of modern civilization—when the great aim of the student was the discovery of the philosopher's stone or the transmutation of metals. The mechanical ingenuity of that age was exhausted in building automaton figures, which should perform the functions of men and animals—like the writing boy of Droz, or the duck of Vaucanson, which, it was said, ate and digested food. The aim of the industrial inventor of that age sought only to devise contrivances which should fulfill the thousand services of *one man*; while the mechanical ingenuity of to-day is exerted in producing machines which shall perform a single service, but in doing so take the place of a *thousand men*. The artisans of the present day have a philosopher's stone, indeed; one whose magic touch not only brings gold to their coffers, but one which relieves them from the drudgery of life—an obedient servant, whose iron arms and never-tiring muscles are ready to do their bidding, wherever mere labor, without thought, is required; leaving to man an almost uninterrupted exercise and improvement of those intellectual faculties, the proper development of which are gradually elevating him toward that high and God-like position which the Creator designed he should occupy when, as His crowning work, He made him in His own image, and pronounced him good.

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W. B. EWER.

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## CONTRIBUTED FOR OUR CABINET.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet and recorded with the name of the donor, and the claim or location from whence it came.

H. W. O. MARGARY, of Boise City, sends us a box of specimens representing quite a number of mines in Alturas county, Idaho. We enumerate as follows:

120. From the Electoral Company, South Boise district, showing considerable free gold. This specimen presents the characteristics common to much of our California gold-bearing quartz, when taken from near the surface.

121. Old Ophir, South Boise district. This is quite an interesting specimen, containing a large amount of what appears to be an arsenical iron pyrites frequent in well-defined crystals, with strong indications of the presence of nickel.

122. Confederato Star, South Boise district; quartz containing a large percentage of sulphurets, finely diffused, so as to give it a bluish tint, with occasional aggregations of crystals, evidently auriferous.

123. Idaho, same district, and apparently from the same vein.

124. Webster; this specimen, which is also from South Boise district, was evidently taken from near the surface, as it contains a large percentage of sulphurets, in a state of partial decomposition from the action of the atmosphere.

125. Havermire, from Yuba district. This appears to be a surface specimen, tinted with yellow; the origin of this color we are unable to state, without further examination.

126. Silver Till, Yuba district, contains a large percentage of sulphurets, may be either argentiferous or auriferous, or both.

127. We suppose, from the label, the name of the mine from which this specimen is taken is the "New." The description already given of No. 121, answers equally well for this also. If it has not already been done, we should suppose the proprietors of both these mines would do well to have an analysis made of their ores—especially if the samples sent are anything like average samples of their ores. These mines are situated in different districts.

128. "76," Yuba district, is a specimen of decomposed sulphuret-bearing quartz, with evident indications of its being auriferous.

129. "Greenback," also from Yuba. Judging from the appearance of this specimen, rich in silver, carrying also copper and perhaps gold, we should judge that it took its name from its color, and we trust its value will not prove it to be a misnomer.

130. Pacific (near top), Yuba district, carries sulphurets and galena.

131. From the Morning Star, Owyhee, received with the above, will be described next week.

132. A "Hair Ball" from the stomach of an ox, from D. B. R., of Ione Valley, though not a specimen of the mineral kingdom, is nevertheless a valuable curiosity, and will receive a place in our cabinet. We shall give some account of those somewhat extraordinary animal aggregations next week.

## ARIZONA—PROTECTION AGAINST THE INDIANS.

Notwithstanding the Indian annoyances in Central Arizona, mining operations there are being pushed with vigor. In our next issue we propose to give a list of the quartz mills and some description of the mines. It is pleasing to know that Governor McCormick's application for more troops has met with a favorable response, and that four new companies have been assigned to the region around Prescott, two of which will go forward by the steamer of the 15th instant, while the other two will probably follow by the next subsequent steamer.

It is the opinion of those well informed that nothing but the hostility of the Indians, which delays and intercepts all business, prevents the speedy occupation of Central Arizona by a large population, and the successful development of mines of great value. We understand that Governor McCormick will remain in this city until the last quota of troops are ready to embark, when he will accompany them to Arizona. Those which leave on the 15th instant, will remain in Wilmington until the Governor's arrival, by which time all needed transportation, etc., will be in readiness for the entire division to take up its line of march at once.

It is much to be regretted that the War Department cannot be brought to realize more fully the actual condition and needs of such portions of our Pacific territories, and the great Overland route, as are seriously troubled by the presence of hostile Indians. If the entire business of protecting our territories against the Indians could be placed in the hands of men who are intimately acquainted with Indian habits and warfare, the security would be vastly increased, while the cost would at the same time be immeasurably lessened. We have no doubt but that the military authorities on this coast, who have been brought face to face with these difficulties, fully understand and admit this fact; but we suppose the Washington authorities are so imbued with the necessity and importance of the old red tape system of military operations, that any effort to change the same would be of little avail.

DR. McDONALD's new castor oil press, in Marysville, is thus described by the *North Californian*: "It is an upright press, with a screw  $4\frac{1}{2}$  inches in diameter, with a 'follower,' which fits in a cylinder eighteen inches long and twelve inches in diameter, and so arranged that the 'cake' or pressed beans can be taken out at the bottom at the will of the operator."

## City Amusements.

METROPOLITAN.—"Mazulu; or, The Night Owl," has retained its place here during the week, and is so attractive that it will probably not be withdrawn for some nights yet. The new ballet of "The Prima Donna" was performed the first time on Thursday evening.

OPERA HOUSE.—Lady Don's farewell benefit took place at this Theater on Wednesday night, on which occasion the house was crowded. Thursday night, "Never too Late to Mend" was given.

ACADEMY OF MUSIC.—Haley's Japanese have proved even a greater success than the first troupe. Their performances are varied and finished, and by no means the least attractive is that they are able to perform to American music.

THE New York *Tribune* says that in 1870 there will be twenty daily coaches running each way over the short gap which will at that time remain open in the trans-continental railway.

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The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

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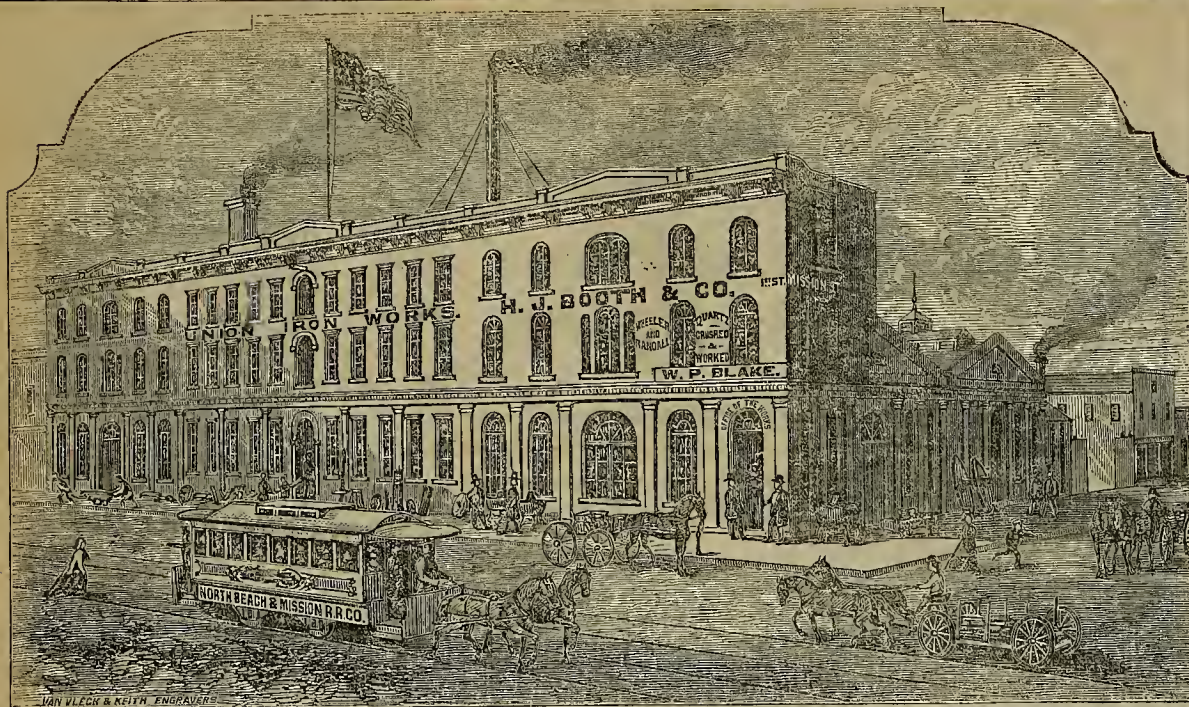
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2 50 15 100 34 286 7 2,300	2 50 15 100 34 286 7 2,300	2 50 15 100 34 286 7 2,300	2 50 15 100 34 286 7 2,300	2 50 15 100 34 286 7 2,300
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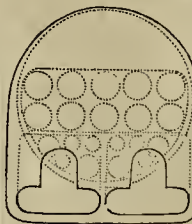
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generally, made to order, and warranted to give perfect  
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23v12-3m

Owing to its general circulation, the MINING AND SCIENTIFIC  
PRESS has perhaps been as valuable and as useful to the  
mining interests as that noted paper, the London "Lan-  
cet," was to the medical profession, acting either as a  
scarifier when too great a plethora of mining bubbles pre-  
vailed, or as a styptic where dangerous bleeding of the  
pockets of the capitalists was concerned. [Copperopolis  
Courier, Oct. 13]



**METALLIC SPECTACLES.**—M. Melacius has made a useful application of M. Foucault's recent discovery of the fact that the sun may be viewed through a lens covered with silver leaf. Foucault having shown that the sun's disc, thus shorn of the fierceness of its beams, can be clearly and leisurely examined, Melacius made the first practical application under the following circumstances: Having been injured while making an experiment in the laboratory, his eyes were painfully affected by light. In this condition he had recourse to spectacles with black glasses, such as are used by engine drivers; over these he put green glasses, which answered pretty well; but on further experiments he found the best method was to use pale blue glasses covered with silver or gold leaf, and these he recommends to all persons troubled with weak eyes.

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The Melting Department will be under the charge of MR. HENRY J. FISHER, for ten years in the United States Mint in this city and Philadelphia, and for the past seven years with Mr. Bell. We would inform Photographers that we are prepared to work their chlorotype of silver and ashes from their paper clippings.

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**GEORGE E. ROGERS.**

**H. W. BROWN.**

October 13, 1866. 1913 q1pnr

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GO TO QUINCY HALL!

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GO TO QUINCY HALL!

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JUST GO TO QUINCY HALL!

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Domestic Cloth,  
ALWAYS GO TO QUINCY HALL!

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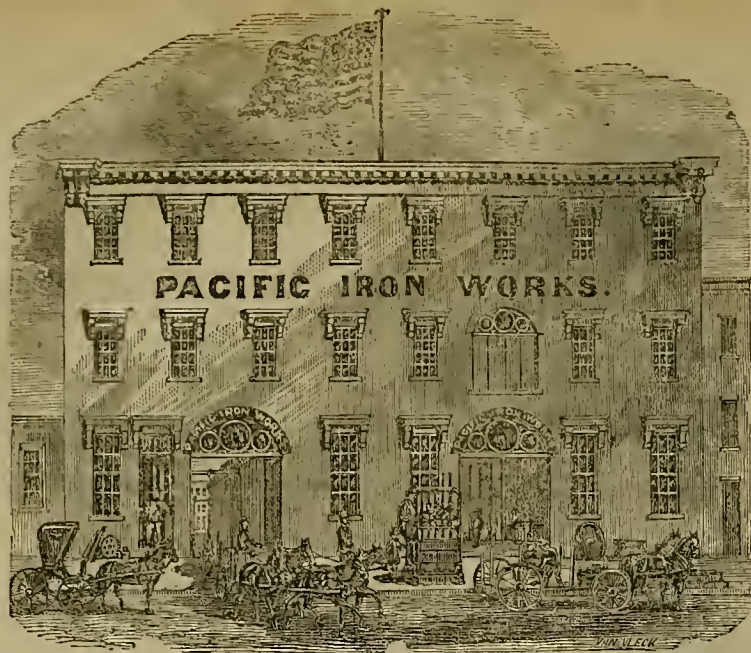
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When notes are given for Annual Life and Continued En-

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(not to exceed twenty six weeks).

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tion of \$50.

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Policies will also be issued for any other amounts within  
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This Company also issues Tickets which are sold by  
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While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

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Jan. 1, 1867.

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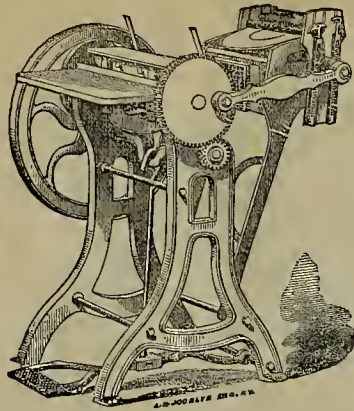
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stitution.  
On and after the 14th of February, the Laboratories will  
be open every day, except Sundays, from 8 A. M. to 5 P. M.  
For further particulars, address  
REV. P. V. VEEDER  
Principal of the City College.  
6v12-20wtf Or at 406 California Street.

**PATENT BUSINESS.**  
We have lately associated with us in the Patent and Me-  
chanical Department of the MINING AND SCIENTIFIC PRESS, a  
gentleman of superior ability and attainments, who has  
arrived direct from the leading patent agency in New York  
City, and having a faithful and reliable associate in Wash-  
ington City, we are now better than ever before prepared  
to secure the claims of our applicants, in a careful, prompt  
and efficient manner.  
DEWEY & CO.,  
San Francisco, June, 1866. Patent Solicitors.

A splendid paper, and should have a good list of sub-  
scribers in prosperous Grass Valley.—[G. V. National

## New Mining Advertisements.

**Julita Gold and Silver Mining Company, Storey**  
County, Nevada.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the tenth day of Janu-  
ary, 1867, an assessment of one dollar (\$1) per share was  
levied upon the capital stock of said Company, payable  
immediately in United States gold coin, to the Secretary,  
607 Washington street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the sixteenth day of February, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Wednesday, the sixth day of March, 1867, to pay  
the delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.  
A. NOEL, Secretary.  
Office, 607 Washington street, San Francisco, Cal. 1a12

**North San Francisco Homestead and Railroad**  
Association, at the City and County of San Francisco, Cal.  
Notice is hereby given, that at a regular monthly meeting  
of the Board of Trustees of said Company, held on the  
eleventh day of January, 1867, an assessment of twelve dol-  
lars and fifty cents (\$12.50) per share was levied upon the  
capital stock of said Company, payable January twelfth,  
1867, in United States gold coin, to the Secretary, at the  
office of the Association, No. 418 California street, Room No.  
5, third floor, San Francisco, California.  
Any stock upon which said assessment shall remain un-  
paid on the twelfth day of February, 1867, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the eleventh day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
GEO. W. KINNEY, Secretary.  
Office, No. 418 California street, Room No. 5, third floor.  
1a12

**Oxford Beta Tunnel and Mining Company, Es-**  
meralda District and County, State of Nevada.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the fifth day of Janu-  
ary, 1867, an assessment of fifty cents per share was  
levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin,  
to the Secretary, or to the Superintendent at the mine.  
Any stock upon which said assessment shall remain un-  
paid on the fourth day of February, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made be-  
fore, will be sold on Monday, the fourth day of Febru-  
ary, 1867, to pay the delinquent assessment, together  
with costs of advertising and expenses of sale. By order of  
the Board of Trustees.  
GEO. H. PEEK, Secretary.  
Office, corner Broadway and Sansome streets, San Fran-  
cisco. 1a12

**NOTICE.**  
The following resolution was passed at the meeting of the  
Board of Trustees of the Ophir Silver Mining Company,  
held this day:  
Resolved, That the resolution of this Board, passed at the  
meeting held December twenty-fourth, 1866, providing for  
the levying of an assessment of five dollars per share on the  
capital stock of this Company, (on account of informality,) be  
and the same hereby is rescinded.  
ROBERT GEORGE, Secretary.  
Office Ophir Silver Mining Company, San Francisco, Janu-  
ary 10th, 1867.

**Assessment Notice.**  
**Ophir Silver Mining Company—Location of**  
Works, Virginia District, Storey County, Nevada.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the tenth (10th) day  
of January, 1867, an assessment of five (\$5) dollars per  
share was levied upon each and every share of the capital  
stock of this Company, payable in United States gold coin,  
on the fourteenth instant, to the Secretary of this Com-  
pany, at the office of the Company, Nos. 4 and 5 Court Block,  
corner of Montgomery and Jackson streets, San Francisco,  
California.  
Any stock upon which said assessment shall remain un-  
paid on the fourteenth day of February, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made be-  
fore, will be sold at public auction on the first day of  
March, 1867, to pay the delinquent assessment, together  
with the costs of advertising and expenses of sale. By order  
of the Board of Trustees.  
Office Ophir Silver Mining Company, Nos. 4 and 5 Court  
Block, corner of Montgomery and Jackson streets, San Fran-  
cisco, California.  
ROBERT GEORGE, Secretary.  
January 10th, 1867. 1a15

**Santa Cruz Petroleum Oil Works Company—**  
Location: Santa Cruz County, State of California.  
Notice.—There are delinquent upon the following described  
stock, on account of assessment (No. 15) levied on the  
fourth day of December, 1866, the several amounts set  
opposite the names of the respective shareholders as follows:  
Names. No. Certificate. No. Shares. Amount.  
Jones, Martha L. .... 639 50 \$25 00  
Reed, H. R. .... 750 25 12 50  
Trillingham, W. H. .... 762 100 50 00  
Winship, E. .... 764 300 150 00  
Zimmerman, J. .... 759 50 25 00  
And in accordance with law, and an order of the Board of  
Trustees, made on the fourth day of December, 1866, so many  
shares of each parcel of said stock as may be necessary,  
will be sold at public auction, by Cobb & Sinton, 407  
California street, San Francisco, Cal., on Tuesday, the  
twenty-ninth day of January, 1867, at the hour of 1 o'clock  
P. M., of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.  
R. VEGENER, Secretary.  
Office, 415 Montgomery street, San Francisco, Cal. 1a12

**Rattlesnake Gold and Silver Mining Com-**  
pany, Brown's Valley, Yuba County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the fifth day of January,  
1867, an assessment of one dollar (\$1) per share was levied  
upon the capital stock of said Company, payable imme-  
diately, in United States gold and silver coin, to the Sec-  
retary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the eighth (8th) day of February, 1867, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the twenty-fifth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
JOHN F. LOHSE, Secretary.  
Office, 318 California street, Up-stairs, San Francisco. 1j12

**Miner Notices—Continued.**  
**Ancient River Channel Blue Gravel Com-**  
pany.—Location of Works: Nevada County, California.  
Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
twenty-fourth day of November, 1866, the several amounts  
set opposite the names of the respective shareholders, as follows:  
Names. No. Certificate. No. Shares. Amount.  
Bancroft, E. W. .... 65 105 \$210 00  
Walter H. Cook ..... 50 125 250 00  
J. H. Bond ..... no certificate 125 250 00  
Mary Webb ..... 50 10 10 00  
Wm H. Ford ..... 39 2 4 00  
Wm H. Ford ..... 51 6 10 00  
Elizabeth Howard ..... 54 2 4 00  
H. W. Hill ..... 10 10 10 00  
Michael Fennell ..... 21 3 60 00

**Hope Gravel Mining Company—Location of**  
Works: Grass Valley, Nevada County, California.  
Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment (No. 11) levied on the  
fifteenth day of November, 1866, the several amounts set  
opposite the names of the respective shareholders, as fol-  
lows:  
Names. No. Certificate. No. Shares. Amount.  
Brown, S. G. .... 67 60 \$50 00  
Brown, S. G. .... 58 10 10 00  
Brown, S. G. .... 69 10 10 00  
Madge, Fred. .... 23 75 75 00  
Madge, Fred. .... 40 11 11 00  
Madge, Fred. .... 44 30 30 00  
Madge, Fred. .... 46 75 75 00  
Madge, Fred. .... 49 75 75 00  
Madge, Fred. .... 51 12 12 00  
Sherp, James ..... 17 155 (balance) 38 00  
Wood, John H. .... 80 100 100 00  
And in accordance with law, and an order of the Board of  
Trustees, made on the fifteenth day of November, 1866, so  
many shares of each parcel of said stock as may be necessary  
will be sold at public auction, at the salesroom of Cobb &  
Sinton, No. 407 California street, San Francisco, California,  
on Tuesday, the fifteenth day of January, 1867, at the hour  
of 12 o'clock, noon, of said day, to pay said delinquent as-  
sessment thereon, together with costs of advertising and ex-  
penses of sale.  
DAVID WILDER, Secretary.  
Office, No. 329 Clay street, San Francisco, Cal. d23-3v

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Hope Gravel Mining Company—Location of**  
Works: Grass Valley, Nevada County, California.  
Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment (No. 11) levied on the  
fifteenth day of November, 1866, the several amounts set  
opposite the names of the respective shareholders, as fol-  
lows:  
Names. No. Certificate. No. Shares. Amount.  
Brown, S. G. .... 67 60 \$50 00  
Brown, S. G. .... 58 10 10 00  
Brown, S. G. .... 69 10 10 00  
Madge, Fred. .... 23 75 75 00  
Madge, Fred. .... 40 11 11 00  
Madge, Fred. .... 44 30 30 00  
Madge, Fred. .... 46 75 75 00  
Madge, Fred. .... 49 75 75 00  
Madge, Fred. .... 51 12 12 00  
Sherp, James ..... 17 155 (balance) 38 00  
Wood, John H. .... 80 100 100 00  
And in accordance with law, and an order of the Board of  
Trustees, made on the fifteenth day of November, 1866, so  
many shares of each parcel of said stock as may be necessary  
will be sold at public auction, at the salesroom of Cobb &  
Sinton, No. 407 California street, San Francisco, California,  
on Tuesday, the fifteenth day of January, 1867, at the hour  
of 12 o'clock, noon, of said day, to pay said delinquent as-  
sessment thereon, together with costs of advertising and ex-  
penses of sale.  
DAVID WILDER, Secretary.  
Office, No. 329 Clay street, San Francisco, Cal. d23-3v

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

Names. No. Certificate. No. Shares. Amount.  
Michael Fennell ..... 22 20 40 00  
Michael Fennell ..... 23 20 40 00  
Michael Fennell ..... 24 20 40 00  
C. W. Jones ..... 25 64 100 00  
H. F. Stoughton ..... 26 33 70 00  
J. S. Moulton ..... 27 21 40 00  
L. P. McCarthy ..... 28 20 40 00  
L. P. McCarthy ..... 29 20 40 00  
John H. Flood ..... 30 10 20 00  
Ada Foy ..... 31 2 4 00  
A. P. Moore ..... no certificate 75 150 00  
Jane M. Stewart ..... 32 30 60 00  
John W. Stewart ..... 33 30 60 00

And in accordance with law, and an order of the Board of  
Trustees, made on the twenty-fourth day of November, 1866,  
so many shares of each parcel of said stock as may be ne-  
cessary, will be sold at public auction, by Olney & Co., No.  
415 Montgomery street, San Francisco, Cal., on the fourteenth  
day of January, 1867, at the hour of 12 o'clock M. of said  
day, to pay said delinquent assessment thereon, together  
with costs of advertising and expenses of sale.  
J. M. HUFFINGTON, Secretary.  
Office, No. 10 Government House, San Francisco, Cal. d23

**Cosima Silver Mining Company, Cosima District,**  
State of Sonora, Mexico.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the seventeenth day  
of December, 1866, an assessment of one dollar (\$1)  
per share was levied upon the assessable capital stock of  
said Company, payable immediately, in United States gold  
and silver coin, to Chas. Baum, Secretary, at the office of  
this Company, 607 Battery street, opposite the Custom  
House, San Francisco.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-first day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the eleventh day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
CHAS. BAUM, Secretary.  
Office, No. 610 Battery street, opposite the Custom House,  
San Francisco, Cal. d23

**Dios Padre Gold and Silver Mining Company,**  
Alamos, Mexico.  
Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
fourth day of December, 1866, the several amounts set op-  
posite the names of the respective shareholders, as follows:  
Names. No. Certificate. No. Shares. Amount.  
William Rihler ..... 299 20 \$50 00  
William Rihler ..... 323 5 15 00  
William Rihler ..... 411 25 75 00  
William Rihler ..... 389 25 75 00  
A. C. Treachy ..... 371 145 438 00  
And in accordance with law, and an order of the Board of  
Trustees, made on the fourth day of December, 1866, so many  
shares of each parcel of said stock as may be necessary, will  
be sold at public auction, by Messrs. Olney & Co., 415 Mont-  
gomery street, San Francisco, Cal., on the twenty-second  
day of January, 1867, at the hour of 12 o'clock M. of said  
day, to pay said delinquent assessment thereon, together  
with costs of advertising and expenses of sale.  
E. C. McCOMB, Secretary.  
Office, No. 1 Government House, corner Sansome and  
Washington streets, San Francisco, Cal. 1a15

**George Washington Gold and Silver Mining**  
Company.—Location of Works: Silver Mountain District,  
Alpine County, Cal.  
Assessment No. 16.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the thirty-first day  
of December, 1866, an assessment of one dollar and fifty  
cents (\$1.50) per share was levied upon the capital stock  
of said Company, payable immediately in United States  
gold and silver coin, to the Secretary, at the office of the  
company, only.  
Any stock upon which said assessment shall remain un-  
paid on the ninth (9th) day of February, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Thursday, the fourth day of February, 1867,  
to pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale. By order of the Board  
of Trustees.  
A. G. WOOD, Secretary.  
Office, 333 Montgomery street, San Francisco. 1a15

**Great Central Mining Company—Location of**  
Works: Yuma County, Arizona Territory.  
Notice is hereby given that at a meeting of the Board of  
Trustees of said Company, held on the twenty-fourth day  
of December, 1866, an assessment of one dollar (\$1) per  
share was levied upon the capital stock of said Company,  
payable immediately in United States gold and silver coin,  
to the Secretary and Treasurer, at the office of the Com-  
pany, No. 302 Montgomery street, San Francisco.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-eighth day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Thursday, the fourth day of February, 1867,  
to pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale. By order of the Board  
of Trustees.  
O. D. SQUIRE, Secretary.  
Office, No. 302 Montgomery street. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
vide District, Del Norte County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of December, 1866, an assessment of fifteen (15) cents per share  
was levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at 603 Market street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of January, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Friday, the eighth day of February,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
S. S. SWEET, Secretary.  
Office, No. 603 Market street, San Francisco, Cal. d23

**Household Copper Mining Company, Low Di-**  
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deemed delinquent, and will be duly advertised for sale  
at



Machinery.

V. CUSHING, Agent

Purchase & Shipping of Machinery OF ALL KINDS.

Special attention given to Quartz Mill Machinery and Findings, and Miners' Material of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to— Governor F. F. Low; C. T. Meador, Stockton; Jacob Underhill & Co., San Francisco; J. W. Stowe, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco.

HUNTER'S

IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphurets ore will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor, 22v13-3m San Francisco.

VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sets made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY, 1v1 San Francisco.

BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION,

and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,

19v12 416 Market street, San Francisco.

Notice to Miners,

Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved pattern, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,

8v13-1y Stove Store, No. 125 Clay street, below Davis.

BLAKE'S QUARTZ BREAKER!

PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077 3v13f SAN FRANCISCO.

Steam Pumps,

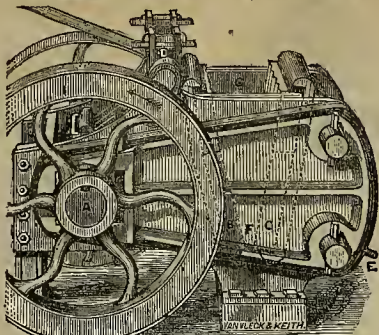
FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS For Steam Engines.

Giffard's Injectors, For Feeding Boilers.

STODDART'S IRON WORKS, 11 4 Beale Street, San Francisco, 23v12 3m

Brodie's Patented Improvements



FOR THE TREATMENT OF

Gold and Silver Ores.

BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1—10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600  
No. 2—15-inch Crusher, capable of similarly putting through five to six tons per hour, \$850  
No. 3—18-inch Crusher, will in a similar manner crush from seven to eight tons per hour, \$1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion of the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

RAWHIDE RANCH, Tuolumne Co., Sept. 28, 1866.

JAMES BRODIE, Esq., San Francisco—My Dear Sir: I feel it my pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,

R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium in the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1866 the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A diagram, with explanation of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

The drawing and full description of this machine will be found in the "Mining and Scientific Press," of Sept. 22d, 1866.

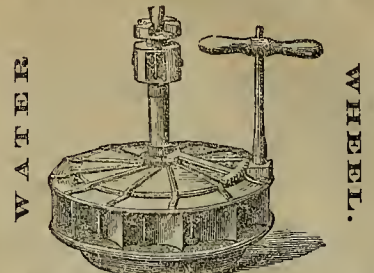
BRODIE & RADCLIFF, Express Building, 402 Montgomery street, San Francisco.

12v13f

GLASGOW IRON AND METAL IMPORTING CO., No. 27 Fremont street, SAN FRANCISCO.

Begin to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined Bar Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes, CAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market.

LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALLED AND UNRIVALED IN THE United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc. CALIFORNIA REFERENCED.—E. Stetson, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; E. McMillan, Lexington Santa Clara County. Send for Circular to KNAPP & GRANT, Agents for California, 26v13-1yq 310 Washington street, San Francisco

Hunt's California Pump

Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years.

Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Brigat, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.

PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3—3-inch cylinder, 6-inch stroke, \$30 00  
No. 4—3½-inch cylinder, 6-inch stroke, 35 00  
No. 5—4-inch cylinder, 6-inch stroke, 45 00  
No. 6—5-inch cylinder, 8-inch stroke, 60 00  
No. 8—8-inch cylinder, 12-inch stroke, 90 00  
A liberal discount will be made.

For further particulars, send for Circular.

E. O. HUNT, 21v13f 28 Second and 110 Jessie streets, San Francisco.

J. MARSHALL, W. WYLLIE, GLASGOW IRON AND METAL IMPORTING CO., No. 27 Fremont street, SAN FRANCISCO.

Begin to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined Bar Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes, CAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market.

Country Orders punctually attended to. 19v13-q

NITRO GLYCERINE.

Nobel's Patent Blasting Oil!

WE ARE NOW PREPARED TO SELL NOBEL'S PATENT Nitro Glycerine. The same is stored with Mr. C. S. SWENSON, at Michigan Bluff, Placer county, from where the Oil has to be received by purchasers.

Application to be made to Mr. C. S. Swenson, or to the undersigned.

IGNITERS AND CARTRIDGES!

For sale at the same place.

Mr. Swenson is willing, if desired, to show purchasers the mode of blasting, either at his own mine, Michigan Bluff, or at the places of purchasers.

Pamphlets, with minute instructions, will be presented to every purchaser or applicant.

BANDMANN, NIELSON & CO., 21v13 210 Front street, San Francisco.

FOR SALE!

QUARTZ AND MINING MACHINERY

ONE GARDNER'S THUNDERBOLT CRUSHER, LARGEST size and best quality; is entirely new, with all extras—with a large lot of other Quartz Machinery, including Engines, Pumps, etc.

COFFEY & RISDO 15v13

Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF the Nervous System and Reproductive Organs, to be had by addressing and enclosing twenty-five cents, postage stamps, to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco.

It contains correspondence from different sections, giving accounts of new discoveries in gold, silver and copper, and should be taken by every person that wishes to keep well posted on the developments of our State and the Territories.—Mountain Messenger

Vein Mining.

This class of mining is yearly attracting more and more attention, and the fact that it is necessary to go deep on our quartz veins, to properly develop their riches, is now generally conceded. Washoe has been a "good school" for the quartz miners of California, in which the necessity of deep mining has been well demonstrated. A few years ago Grass Valley was about as dull as Auburn is now, the quartz miners there having worked the surface rock, found near the water level barren spots, and concluded the veins had about given out; but the mining operations over the Sierras gave them "new ideas," and the rule is "go down on your ledge;" no richer quartz claims are to be found in the State than are now worked in Grass Valley, in Amador county, and other mining sections of the State, where deep mining has become the rule; According to an eminent mining engineer, the great and daily increasing value of mineral productions renders any light which can be thrown upon the principles involved in the formation of veins, and the working of them, very essential. No miner should expect to find, until the water level is met, the most productive portion of the vein; above that point, irregular masses of ore may be obtained, but no safe working estimate can be formed, nor any reliable results reached, until the work has progressed under water. The yield from very wet veins has always been the most productive, as the experience of all vein miners has proven. Before commencing work on a mine, a well digested plan of the work should be settled upon, and then never deviated from. By so doing, thousands of dollars would be saved.

The reason of unsuccessful quartz mining heretofore, in our vicinity, has been the insufficiency of capital. Quartz mining requires an abundance of capital, with considerable patience and perseverance. No mine can be worked successfully without an expenditure of many thousands of dollars. And then there are so many delays that cannot be avoided, so many additional items of expense that could not be foreseen, that liberal calculations should always be made as to amount needed in properly opening a mine.

Many of the mines of Europe, Mexico, and South America have been worked to extraordinary depths, and generally proved rich. Humboldt speaks of a number of them over 2,000 feet deep, worked for centuries and paying millions of dollars. These are facts that our quartz miners should bear in mind, and be guided by, in developing their leads.—Placer Herald, Jan. 5th.

LABOR AND CAPITAL.—A "union of interests" between the employer and the employed, is now beginning to be considered the true policy in England. The London correspondent of the New York Tribune says:

In the iron, the cotton and the woolen trade, there are numbers of the ablest and most successful masters inquiring into the practical working of the "partnership of industry," and not a few actually converting their works already into such partnerships.

Even a year ago I felt that I must run for a straight waistcoat for any one who should have prophesied that the principles of "fixed payment on capital," and "a share to every laborer in profits, proportionate to his earnings," would have made such way and obtained such powerful and able converts by this time.

Unless some very unforeseen accident happens, the co-operators will have the ball at their feet in England in another ten years. There is scarcely one really thoughtful politician I know, who is not thoroughly in favor of the present development of what used to be called socialism.

VEGETABLE SOAP.—Mr. Payne recently brought from China to Europe specimens of the vegetable soap used throughout that Empire. It is in the form of pods produced by two leguminous plants. Before using these pods for washing, the Chinese first cut away the greater part of the epicarp, and then rub the wet linen with the pod thus denuded; after which it is enough to rinse the linen in fresh water.

TO DETECT SULPHURIC ACID IN VINEGAR. A German journal publishes a neat process, which may be thus briefly stated. Into the vinegar to be tested, put a small quantity of starch, boil the solution down to half its original measure, then drop into it a very minute portion of iodine. If the vinegar is pure, the usual blue tint will be shown; but if it be adulterated with sulphuric acid, no such coloration will take place, because the action of this acid upon starch converts it into glucose or grape sugar.



**A CHANCE FOR SPECULATION.**—In Santa Cruz county, on the ranch of Harry Love, near the San Lorenzo, eight miles north of town, is an immense mountain of pure white flint sand, containing a larger proportion of silica than any other sand, so far as we know, yet discovered in the State. The deposit is inexhaustible, and has none of the indications of sea-sand, thrown up by the fretful waves, but more resembles pulverized quartz of a calcareous or argillaceous nature, in the exact proportions necessary to make all the finer qualities of Flint, Sevres and Bohemian glassware, now in general use and commanding such a high price in the markets of the world. This valuable deposit of sand has been known for several years, and has been tested by competent glass-blowers who pronounce it superior to the article in general use. The deposit is within half a mile of the river, where ample water power for pressing and grinding plates, of largest size, could be easily and cheaply procured. The land could be bought at a nominal price, and there is sufficient timber to burn charcoal (which is more desirable than stone coal in flint-glass manufacture) for the works for last centuries. Capitalists should examine into this matter and invest, as there is no enterprise so certain to return large profits as the one proposed.—*Santa Cruz Sentinel.*

THE REESE RIVER REVELLE thus winds up an article in ridicule of those who point to the idle mills and the "gopher holes" about Anstin as proof that the mines are valueless:

The mining property of the district was never in so good condition as at present. It is being generally managed by capable men, who have had experience in mining, and intelligent system is now the rule. The plan of mining pursued on Lander Hill is not surpassed in this State or in California. Let any person who doubts this assertion visit such mines as the Savage, Great Eastern, Timoke, Buel North Star, Magnolia, Florida, Morgan & Muncey, North River, and the Oregon, North Star and Southern Light of the Manhattan Company, on Lander Hill, the Camargo and Whitlatch Union in Marshall Canon, and the Chase and Metacom in New York Canon. These fifteen mines alone are sufficient to maintain a town of the first rank. In our deliberate judgment, the product of silver in the Reese River District before the lapse of ten years will not be excelled by any district in this State.

A MISSOURI hunter, it is reported, found, the other day, a keg in the washed banks of a ravine which empties into the Mississippi, a short distance below Wolf Island. It was heavy, and he dashed in its head. It contained over \$30,000 in gold and silver coin. It is supposed that it was placed there by some one who fell in the late war of the rebellion.

SEA-WATER from Dieppe is quite an article of trade in Paris. Large quantities are used for baths and for aquaria, which last are fashionable there.

## MELLVILLE C. KEITH, M. D.

Homeopathic Physician,  
No. 655 Howard Street, between Second and Third,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and CHRONIC DISEASES. Consultation free.  
18v13 6mnr

## Mammoth Quartz Lode, Keysville District, Kern County.

"To all whom it may Concern,"  
ALL PARTIES negotiating for interests in the above Lode, would do well to examine titles before investing, as the legal title to a considerable portion thereof is vested in the undersigned.

WILLIAM MARSH,  
W. L. KENNEDY,  
Keyville, Kern County, Oct. 1, 1866. 18v13ur5m

## WE ARE NOW OFFERING OUR IMMENSE STOCK

## Fine Custom Made Clothing

Gents' Furnishing Goods  
AT PRICES THAT DEFY COMPETITION.  
Our Stock of Clothing Consists of  
ALL THE LATEST STYLES

BOTH OF MATERIAL AND FINISH.

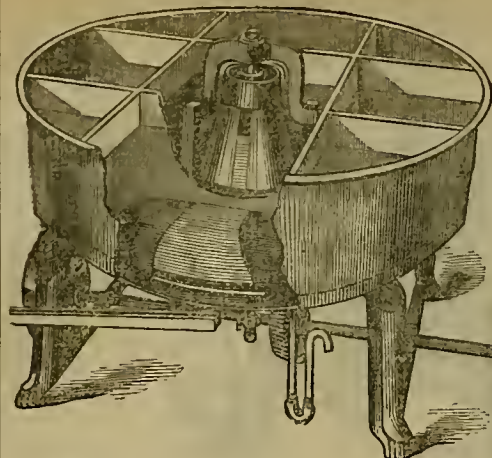
A Large Assortment of  
Trunks, Valises, Carpet Bags, Blankets, Etc.,  
AT EXTREMELY LOW PRICES.

J. R. MEAD & CO.,  
Cor. of Washington and Sansome streets.

We receive, regularly as clock work, this exceedingly valuable and interesting journal.—[Napa Reporter]

## Knox's Improved Patent Amalgamator and Separator,

With Palmer's Patent Steam Chamber or Die.



For further particulars, inquire of

14v13 p12q

At the Golden State Iron Works, No. 19 First Street, San Francisco.

## Professional Cards.

### SHERMAN DAY, Mining Engineer,

No. 57 Montgomery Block, San Francisco.  
Will examine, survey and report upon mines, and consult and advise concerning investments in mining property, or the machinery management and expenditures of mines.  
24v

### FREDERICK MANSELL,

Mechanical & Architectural Draughtsman,

No. 421 California street, corner of Leidsdorff.

Drawings of Mines made for parties applying for patents at Washington or London. mar23-14.

JAMES M. TAYLOR,  
Attorney and Counsellor at Law,  
COURT-COMMISSIONER, appointed by the Fourth District Court, COMMISSIONER OF DEEDS for Nevada and Massachusetts.  
Court Block, San Francisco.

Entrances opposite City Hall, Merchant street, and 636 Clay street. 14v14

### W. E. GOLDSMITH.

Card and Seal Engraver,

505 Montgomery street, up-stairs, (over Tucker's), SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neatness; Notarial, Commissioner and Society Seals. 19v13-2q

### DR. H. AUSTIN,



DENTIST,  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-qy



### DR. D. R. BECKFORD, OCULIST,

Office of Dr. Beckford's "Golden Eye Water,"  
16v12-3m NO. 719 CLAY STREET.

## PHOTOGRAPHS

MADE BY

MESSRS. CHALMERS & WOLFE,

611 Clay street, San Francisco.

Are the best made in the city. An examination of their specimens before going elsewhere, will prove the truth of the above assertion. Prices—the lowest adopted by the Association of Artists. Remember the place, 611 Clay street. 11v13-2m

### GEORGE H. POWERS, M. D.,

Gives exclusive attention to

Diseases of the Eye.

No. 626 California street, between Dupont and Kearny.

Dr. Powers refers, by permission, to Rev. A. L. Stone, D.D., Ira P. Rankin, Esq., L. B. Benchley, Esq. 17v13-6m

### DR. A. HARTMAN,

Electro-Magnetic Physician,  
CURES ALL CURABLE DISEASES, BY THE CONCENTRATION of the vital forces. Nature's own method of cure. The blind made to see, the deaf to hear, the lame made to walk, and the sick healed. Come and see the afflicted at the rooms. They will speak for themselves. The poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating rooms, Crim House, 223 Kearny street, between Sacramento and California. 21v13m



STANDARD SOAP COMPANY'S  
WASHING POWDER.

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1 lb each, and in wooden boxes of 10 lbs bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 19v12q

THE MINING AND SCIENTIFIC PRESS, of San Francisco, comes to us this week printed on the loveliest white paper, and only seventeen days old. It is the best mining journal in the country.—[Colorado Journal, Dec. 4th.]

## JOHN TAYLOR & CO.

IMPORTERS,

AND DEALERS IN

ASSAYERS' MATERIALS,  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.

512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

ASSAY AND RUSSIAN BALANCES,

And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of the coast.

A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' Sundries, Acids and Chemicals, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

## WOODWARD'S GARDENS!

MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

Open Every Day!

ADMISSION:

To all parts of the Garden.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market Street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

## Baldness! Baldness!!

CAN BE PREVENTED, BY USING

## Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

W. E. MAYHEW, Druggist,

N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13-6w

## IMPORTANT

## WORKERS OF GOLD & SILVER ORES.

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on Mr. WILLIAM SLOSSON, at Prof. W. P. Blake's Office, and obtain a Business Circular, just published by the WURTZ AMALGAMATION COMPANY, of New York, who have secured, under the Patents of Prof. Henry Wurtz, the sole and exclusive right to the use of sodium in amalgamation. Mr. Slosson is prepared to supply the licenses of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Bernard, of Columbia College, "two grains of gold may be gathered where but one was before." 19v13-2m

**Economy in Advertising.**—The MINING AND SCIENTIFIC PRESS is the best and most economical mining advertising medium in this city. Our terms are less than one-half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

## HALL'S SARSAPARILLA,

YELLOW DOCK AND IODIDE OF POTASS.

THE BEST BLOOD PURIFIER KNOWN.

Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Bolls, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Arsenic nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."

SHEPARDSON & GATES, Prop'rs,  
N. W. cor. Sansome and Commercial sts.

22v13-3m

## TRUSSES! TRUSSES!!

Abdominal Supporters!

Shoulder Braces, Etc., Etc.

WE WOULD CALL THE ATTENTION OF DEALERS and others to our complete assortment of these goods, including Bartlett & Bunnell's Celebrated BALL AND SOCKET REVERSIBLE TRUSS, which is decidedly the best article ever introduced into this market. By a combination of the movement of the ball and socket, and the movable arm, any desired angle may be obtained. Call and examine for yourselves. A liberal discount to the trade.

SHEPARDSON & GATES, Agents,  
Corner Sansome and Commercial streets.

## Rheumatism!!

Still Another Witness!

LATHROP, Cal., Sept. 19, 1866.

(White Oak Township, El Dorado Co.)

This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than a slight and temporary relief.

About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably puts it to flight. I therefore cordially recommend it to the afflicted as an untailing remedy for Rheumatism.

FRED'K FABER.

DR. RICHARD'S REMEDY is for sale by

H. BOWMAN, Druggist, Sacramento.

And by Druggists generally.

25v13

## The Mercantile Gazette

—AND—

## PRICES CURRENT,

E. D. WATERS, Proprietor.

Office, Northeast corner Clay and Battery sts.,

SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only

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ON THE PACIFIC COAST.

PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

## THE LETTER SHEET PRICES CURRENT

For enclosure in letters, is also published every

STEAMER DAY.

13v131f

## REPORT

—OF THE—

## COMMITTEE

—ON—

## SEWING MACHINES!

California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

FOR GENERAL FAMILY USE

—THE—

## "FLORENCE"

—IS—

## "THE BEST."

(Signed)

J. N. ANDREWS,  
THOMAS C. MCMALE,  
L. ELIUS.

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

SAMUEL HILL,

General Agent, 111 Montgomery street, San Francisco.

17v13



## COLLIERY EXPLOSIONS—THE DAVY LAMP.

The late disastrous colliery explosions at Barnsley, England, was one of the most disastrous on record. For the course of fully a century, the scientific men of England have been laboring to devise ways and means to prevent the occurrence of these terrible calamities. Very superior means of ventilation were at first resorted to; but with only partial success, and one after another the deepest and most dangerous coal mines had to be abandoned. The introduction of the Davy Lamp, however, in which the flame is confined within a covering of wire gauze, seemed at first to promise immunity from such danger, and many abandoned mines were once more put into active operation. Time passed on; explosions continued, and in 1849, thirty-three years after the introduction of the Davy Lamp, a careful tabulation of such accidents for sixty years, astonished the public with the fact that more lives had been lost during the thirty years in which the Davy Lamp had been used, than during the same period next preceding its introduction.

The increased extent and risk of mining operations at that time, however, added to the well-known safety qualities of the lamp, rendered it quite certain that without the lamp many more lives must have been lost, than were then enumerated. A summing up at this time would probably present quite as unfavorable a result as did that of 1849.

But has the safety lamp really disappointed the expectations of science, or betrayed the confidence which has been placed in it for the last fifty years? Not at all. It has never yet been shown, in any one case, that the Davy Lamp has proved treacherous to its trust, or ignored the deductions of science. Thus far, in every case where the facts with regard to the causes of the explosion have been attainable, it has been shown that either carelessness, ignorance or wickedness have been the cause of the disaster.

A single mesh of wire, accidentally broken in a current of gas, may produce an explosion. It is often the case that sufficient gas will enter the lamp to cause a slow burning of the gas inside; which, if it increases, should be sufficient warning to the miner to leave the dangerous locality until additional ventilation should render it safe. Oftentimes, instead of doing so, the ignorant miner has endeavored to *blow out the flame*, instead of smothering it, or leaving with it. The effort to do so, has often resulted in forcing the flame through the wires, when an explosion has immediately followed. Lamps have often been carelessly opened in places supposed safe, and thus communicated fire to the gas. Lighting matches have not unfrequently produced the same casualty. A rapid movement of the lamp from one place to another has been known to cause an explosion by thus forcing the flame through the meshes; the same as though it was held in a strong current. Thus it is, by carelessness or ignorance, that nearly all the explosions in the English coal mines for the last fifty years have occurred. The lamp is an almost perfect protection when due care and vigilance is employed.

It is supposed, from certain circumstances brought to the notice of the coroner, that the late terrible explosion at Barnsley was caused by the careless handling of the lamp, in the manner last described. It is seldom that explosive gases are met with in other than coal mines, and in them only at considerable depths; hence we have thus far been free from such accidents in California—one or two slight ones only having occurred. As we go deeper in our coal mines, however, we should eventually be prepared to encounter this dangerous element.

ADAM SCHESSLER, of Yuba City, has 35,000 bearing vines on seventeen acres of land. Last year he made 12,000 gallons of wine and 300 gallons of choice brandy.

## Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada.

Fig. 1.

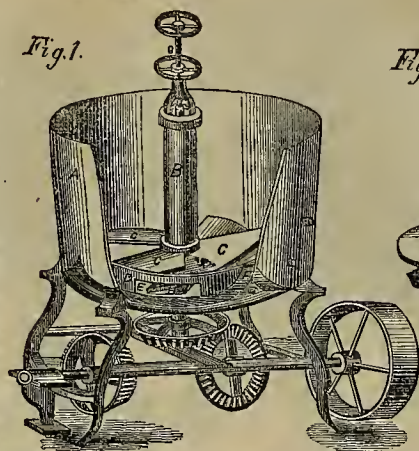
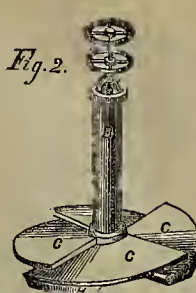


Fig. 2.



## Excelsior Double-Acting Suction and Force Pump.

The Best for Mining, Farming and Domestic Use.

THE EXCELSIOR PUMP is a California invention of intrinsic merit, and as such is being rapidly introduced, and giving perfect satisfaction. At the Mechanics' Institute Fair (1865), it was awarded, for its superiority, a

## Premium Medal.

It is manufactured by California Mechanics, in the most perfect and durable manner.

It is remarkably simple in construction, and its valve chest is almost instantly accessible without disconnecting the air-chamber, suction or discharge pipes. It can be worked at any speed.

Figure 1 is a sectional view of a 6-inch Mining Pump, showing the plunger and hemppacking, and the valve-chest containing the puppet valves. Fig. 2 illustrates the water-passages and valve seats in the chest.

The following sizes are constantly manufactured of this

## SUPERIOR DEEP-WELL PUMP.

No. 1—Cylinder 2½ inches; stroke, 6 inches; capacity 750 gallons per hour; weight, 60 pounds.

No. 2—Cylinder, 3 inches; stroke, 7 inches; capacity 1,280 gallons per hour; weight, 89 pounds.

No. 3—Cylinder, 4 inches; stroke, 9 and 8 inches; capacity, 2,500 gallons per hour; weight, 200 pounds; with iron frame and slide complete.

No. 4—Cylinder, 5 inches; stroke, 15 inches; capacity 5,420 gallons per hour; weight 500 pounds.

No. 5—Cylinder, 6 inches; stroke, 24 inches; capacity 12,575 gallons per hour; weight, 1,000 pounds.

The Nos. 3, 4 and 5, are made to endure the

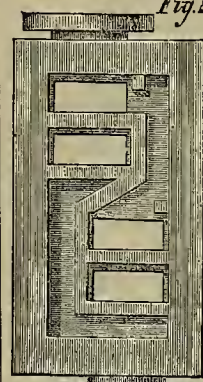


Fig. 2.

severe test of use in mines, and are constantly superseding those of other manufacturers. The pistons being packed with hemp, are proved to be far more durable and less expensive than leather.

We manufacture to order 8 and 10-inch Pumps. Also, sell at cheap rates, 5 and 6-inch Brass Pumps for ships.

For Circulars, or further particulars, inquire of or address J. W. BRITTAN & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or 1am1S CUSHING & CO., Prop'rs, San Francisco.

## GREGORY YALE, Attorney and Counsellor at Law,

No. 18 Merchants' Exchange, (Battery and Washington streets).

Special attention given to obtaining Patents for Mining Lodes under the Act of Congress of July 26th, 1866; and Claims filed before the U. S. Registers and Receivers in any of the Land Districts in the State, and Contests before the Courts, under the Law, attended to. Opinions prepared upon all questions relating to Mining Laws. 1v14-1m

THE PRESS is a large, sixteen-page paper, and is truly a valuable assistant to the mining interests of the Pacific Coast.—[Nye County News.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, (which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, talcines, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m JAMES HITCHENS.

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Bookellers and Stationers, San Francisco, Cal.

W. T. GARRATT, City

BRASS AND BELL FOUNDER.



Cor. Mission and Fremont sts., SAN FRANCISCO.

Manufacturer of Brass, Zinc, and Anti-Friction Iron

Babbet Metal Castings:

CHURCH AND STEAMBOAT

BELLS,

TAYERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liqueur, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZLES

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 61f

## Pacific Map Depot.

A. GENSOUL,

PUBLISHER, IMPORTER AND DEALER IN

MAPS, ATLASES,

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And all articles used by Engineers. Cheltenham Fire Clay Works, St. Louis;

PATENT METALLIC BURIAL CASKETS

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103 California street, corner of Davis street.

15v13-3m10p SAN FRANCISCO.

## Foundry for Sale.

A One-half Interest in the UNION IRON WORKS, SACRAMENTO,

Owned by William B. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 8½ feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address

WILLIAM B. WILLIAMS, Sacramento, Cal.

## California Steam Navigation

COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE

" CHRYSOPOLOS.....CAPT. A. FOSTER.

" YOSEMITE.....CAPT. W. BROMLEY.

" CORNELIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF

at 4 o'clock P. M. EVERY DAY (Sundays excepted), for

Sacramento and Stockton, connecting with light draft

steamers for Marysville, Colusa, Chico, and Red Bluff.

Steamships AJAX, PACIFIC, ORIZABA, CALIFORNIA,

ACTIVE and SENATOR, leave, as advertised, for Honolulu,

Portland, Oregon, New Westminster, British Columbia,

Victoria, V. I., Santa Barbara, San Pedro, and San Diego.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE, President.

13v12

## To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$50,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 535 Clay street, San Francisco. 23v13-6m



# Mining and Scientific Press.

Terms: One Year, \$5; Six Months, \$3.

Single Copies, Fifteen Cents.

A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JANUARY 19, 1867.

VOLUME XIV.  
Number 3.

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## The Pacific Chemical Works.

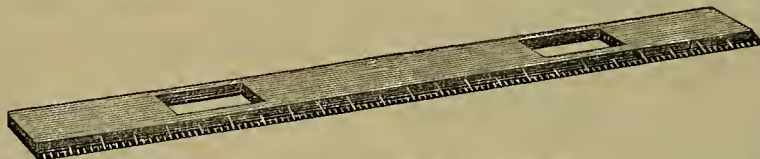
We took occasion, a few days since, to pay a visit to the Chemical Works of Messrs. Falkenau & Hanks. This is one among the numerous branches of industry which have recently been established in this city, and which are so suggestive of the progress that is now being made by the people of this coast. The Pacific Chemical Works were established about six months ago, the Laboratory being located on the corner of Center and Folsom streets, near the Mission. The works are quite extensive, substantial, and admirably arranged. The company is well prepared for every description of work pertaining to an analytical and manufacturing laboratory. Assays, analyses, and chemical investigations of every character are there made at the shortest notice. Pharmaceutical preparations, photographic chemicals, and all chemicals in general use in the arts and manufactures, are either kept constantly on hand, or made to order. Messrs. Falkenau & Hanks are also prepared to give advice upon all matters pertaining to technical chemistry.

The importance of an enterprise of this kind to our growing manufacturing industry is almost incalculable, to say nothing of the increased development of our home resources which it induces, through the manufacture of such chemicals as are required on this coast from the crude materials which abound within our own territory. Among the numerous articles of their manufacture, which are beginning to enter into general use on this coast, we noticed some very fine samples of cyanide of potassium, an article for which there is now a large demand among our quartz miners. Particular attention is paid to this especial branch of chemical manufacture, the great advantage in the use of which, in amalgamating operations, is beginning to be very generally understood. Their city office is at 629 Washington street.

**THE LAWS OF ARIZONA.**—We are indebted to Gov. McCormick for a full set of the Laws of Arizona, passed by the Territorial Legislature of 1864-5-6, properly indexed for convenient reference; the whole prefixed by the Organic Act of the Territory. They form a valuable addition to our library.

## Clegg's Counting House Ruler.

We give annexed a very simple yet useful form for a Counting House Ruler, or one which answers admirably for all ordinary purposes. It has been devised by Mr. D. Webster Clegg, of the Pacific Business College of this city. Its advantages are numerous—its disadvantages, none. Hence, it should be preferred to all other rulers. Among its advantages, in addition to those common to the ordinary rulers, we may mention its use as a paper-cutter, as a rule for measurement, and its adaptability for exact measuring of various distances, as usually required in ruling vertical lines for dollars and cents, or pounds, shillings and pence, or for thousands of dollars in the dollar column, to avoid the necessity of pointing off the numerical period, together with any desired and uniform width of parallel lines, etc. The under portion of the ruler is slightly concave, so as to avoid



CLEGG'S NEW PATENT COUNTING-HOUSE RULER.

blotting; the edges are also made beveled. By raising the ruler, as the work progresses, the bearings always come between the lines, so that the writer can rule backward or forward. The method of measuring off variable distances will be at once suggested to the observer, by an examination of the illustration herewith presented, which is done by placing the lower beveled rule-edge of the ruler to the edge of the paper or line already drawn, or the upper or lower edge to the two openings, as the case may require, which arrangement locates the ruler exactly in its proper position for drawing the next line, and so on. By varying the width of the ruler and the corresponding openings, any desirable variation of space may be readily attained. The saving of time, and uniformity and neatness of work, secured by the employment of this ruler must soon bring it into general use. The simple fact stated at the outset, that it cannot possibly have any disadvantage, inseparable from other rulers, and the possibility that it might possess some positive and peculiar advantages over those in common use, should be quite sufficient to determine the buyer in its favor in all cases. In the counting-house, in the school-room, and in the office of the professional man, it is equally serviceable. As a paper-cutter, with its natural handle, it excels all patented ones for that purpose. This ruler has been pronounced by those who have examined it, to be, without doubt, the *ne plus ultra* of rulers. It will soon be for sale by the trade generally, and can be made of wood, metal, or any other desirable material. Applications for a patent for the same have been made through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

## The Great Central Copper Mine—Arizona.

This mine is located on Williams' Fork, nine miles from the Colorado river, and about 1,000 feet from the celebrated Planet mine, which has been shipping ore to this city for some time past. It is thought by some to be on the same vein with the Planet; but the supposition has not yet been demonstrated. The mine is owned chiefly by San Francisco capitalists, and is under the superintendence of Mr. Wm. Thompson. Work was commenced upon it about three years ago, but until quite recently has progressed but slowly, in consequence of the unsettled state of the country, and the difficulties of transportation between this city and the Colorado. These difficulties, however, having now been measurably removed, active operations have been commenced, which have already resulted in most important developments.

According to the report placed at our dis-

**CONSULATE REQUIREMENTS.**—There is no position that Americans seem to covet so much as that of Consul to a foreign port. Applications for these posts are so numerous, and so frequently from persons totally unfitted to perform the duties of such an office, that the Secretary of State has issued a circular of instructions to applicants, setting forth the necessary requirements for such a position. In this circular, applicants are informed that they must be over twenty-one years of age, undoubtedly citizens, have taken the oath of allegiance, be able to write a good hand, thoroughly acquainted with arithmetic, geography, English grammar, bookkeeping and history, especially that of the United States. They will also be required to pass an examination in the Consular Manual, Kent's Commentaries, Story on the Constitution of the United States, and the text of Wheaton's Elements of International Law. They should also understand French, or some other European language.

**A NEW ROASTING FURNACE.**—Messrs. Agrell & Klepzig have devised a new roasting furnace, which is so constructed that the hearth is caused to revolve, while a set of stationary stirrers is made to so turn and distribute the mineral as to obviate any necessity for hand stirring. The stirrers are attached to a shaft which extends horizontally over the hearth, from which they may be readily removed by merely slipping them along over the end of the same, and taken out at the working door. The shaft is made hollow, the better to withstand the action of the gases, and to allow of the application of steam, if thought desirable. The furnace is charged through hoppers upon its top in the usual manner, and requires no attention after the charge is placed upon the hearth until it is ready for removal, except the tending of the fire. A drawing of one of these machines may be seen at the Pacific Foundry, on First street, which will be explained to any parties who may be desirous to examine into its principles. Applications for a patent for this invention has been made through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

**THE CONSOLIDATION ACT.**—We have to acknowledge the receipt of a copy of this Act, "The Charter of the City and County of San Francisco; with other acts specially and generally relating to San Francisco, and the General Orders of the Board of Supervisors." It is compiled by T. Hart Hyatt, Jr., and published by the order of the Board of Supervisors. It has a complete and convenient index. It is not only indispensable to the lawyers and the law-makers of the city, but is a desirable addition to the library of the private citizen.

**THE MINING LAW** passed by Congress last July, has, as it happens, never been sent to the different U. S. Land Offices. Now that a change in the law is contemplated, it will probably not be sent to them until some action is taken.

The ores of this mine are oxyds and carbonates, very little or no iron or sulphur being present; hence the company is able to turn out at one smelting a very good article of copper. Some of this copper has been used by the brass founders of this city, who have pronounced it a very fair article for many commercial purposes, just as it comes from the furnace. Within less than two months they will have a larger furnace in operation, which they think will be able to turn out from three to five tons of copper per day. The company own two parallel ledges of 3,600 feet each. Only one ledge has as yet been developed to any considerable extent. Upon this an incline has been sunk to the depth of one hundred feet, at which point there are some indications of sulphurets coming in. At the depth of about fifty feet drifts have been run each way from the shaft about one hundred feet, all the way in good ore—vein varying from five to seven feet thick. The shaft is also connected with the surface by a tunnel, through which the ore will be taken out. The outcrop of the vein has been stripped quite a distance, developing good ore all the way. The superintendent estimates that he has fully five thousand tons of ore opened to sight, which will average a yield of 25 per cent.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Rittinger's Ore Separating Boxes and Funnel Boxes.

Messrs. Editors:—In your issue of the 5th instant, I noticed an article headed "Rittinger's Funnel or Pointed Boxes." As Ritter Van Rittinger is a personal friend of mine, and, as I am, perhaps, better acquainted than any other person in this country with the machinery which bears his name, it may be of interest to your readers to learn who Ritter Van Rittinger is, and what he has done for the development of the mining interest.

Mr. P. Rittinger, who is now a baron and a privy councillor of the Emperor of Austria, was an official in one of the Hungarian mines, and while there acting as a superintendent of the crushing and concentrating works, studied thoroughly the modes of concentrating ores, as practiced at that time. His attention was first called to a separation of the ores, after being crushed, according to size. He was not only successful in his first attempt, but in all subsequent machines which he constructed for the purpose of concentrating ores. I may safely say there is no man that stands so high in the estimation of scientific men, in this branch of science, as Baron Rittinger. The Germans call him the champion of mining engineers. In order to form some idea of the extent and value of his inventions, I will state that I have all the drawings of the same, and I would decorate my office with them, but they are numerous that it would require three good sized rooms for their proper exhibition. I am willing to show them to any one who wishes to learn something about the science of concentrating ores—as it may save many experimenters much money, time and labor—I know it will not be a benefit to your Patent Department; but you may realize the benefits otherwise).

I will now come back to the original boxes or tanks which Mr. Rittinger invented in 1846, and which now, after a lapse of twenty years, are put up in Grass Valley as something new in California.

Rittinger's "Separating Boxes," and his "Funnel Boxes" are quite different machines; and not one and the same theory, as would seem to be implied in your notice thereof. The separating boxes were invented in 1846, and the funnel boxes only in 1862. In order to give a clear idea of the nature of the two machines, I will give you a description of both.

The first or original invention, as described in your paper, is the square box, pointed like an upset pyramid to the bottom; they are for the purpose of separating the ores as they come from the battery or stamps, according to size and gravity, in order to make them fit to go into the concentrator. You have given as intelligent a description as it is possible to write of their construction and *modus operandi*, and I trust that either an experienced man has been entrusted with putting them up, or that he will at least take the trouble to learn the true merits of the machinery. He will have a difficult task on his hand, as the people of this country are very impatient with such processes as concentration; and if a plan does not succeed at the first start, the introducer is at once condemned.

## RITTINGER'S FUNNEL.

Now, Messrs. Editors, to describe what is called "Rittinger's Funnel" (which is quite a different machine from the above), without a drawing, is difficult. Suffice it to say, it is nothing more nor less than an ordinary funnel of from two to four feet in diameter, with several other smaller funnels inserted within the first. It is a stationary machine, and requires no motive power to drive it.

The machine is not expensive to build, and is especially adapted for separating the finest slimes. No machine has ever been contrived which is better adapted for collecting the fine floating gold than Rittinger's Funnel.

A leading object with our miners ought to be concentration, as by it alone they are able, in the old countries, to work the poor ores. It is astonishing as well as melancholy to see how most of our mills lose from twenty to fifty per cent. of the gold contained in the ore, while, after the stuff has been already crushed, it costs a mere trifle to save nearly all the gold. We do not need to wait for any new inventions in concentrating machines; machinery has already been invented that does the work as thoroughly as we can hope to see it done—machinery which can be relied on. When we have those machines at work properly, and wish to improve, then will be the time for inventions. In Austria they save 94 per cent. of the metal and sulphurets by concentration, and that from poor ore. Can any mill here say they do the same? I believe not.

Let us candidly ask what has ever been invented in California in the way of concentrating machines? Is there any that does the work of saving near ninety per cent. of the sulphurets? If there is any such machine, I would like to see it. In my opinion, the merits of all the machines constructed here may be very quickly summed up. They save some of the loose sulphurets, but most of the fine and valuable portions go to waste. These so-called inventions have generally been devised by men who are not experienced in this science. They all attempt to save the sulphurets without a previous separation, according to the size of the particles. Ore can never be concentrated without being properly sized beforehand.

It may be asked why have none of these European inventions ever been introduced here, if they can save 90 to 94 per cent. of the sulphurets? The answer is that California miners are very much like the miners of Cornwall. In 1862 I traveled with Baron Rittinger through Cornwall and Wales. I offered to a mining company to erect works at my own expense for crushing and concentrating, if they would divide the savings of labor with me. The superintendent, who was a part owner in the mine, laid my proposition before the meeting of the Board of Directors, and the answer was, "as long as our mines pay a dividend, we don't make any improvements or alterations," and this seems to be exactly the case in California, and especially in Grass Valley.

It is often very interesting to hear people talk of our great mines and reduction works, as if there had never been anything like them in the world. A little more moderation and inquiry would convince them that where people have worked gold and silver ores for the last thousand years, a little more experience has been gathered than has been acquired during the short time in which Californians have been engaged in mining.

Another point to sustain my statement is, that there is not a single manufactory of concentrating machinery in California, while on the Rhine, near Cologne, there were two factories, each employing about 200 men, for the sole purpose of manufacturing mining concentrating machines, *not one of which is now in use in this State*. The same machines made in the factories named I introduced in England, and they are successfully working there to this day; while in California they are waiting for something extraordinary to turn up. Californians seem determined to have original inventions, no matter whether the previous ones are good or not, and while we are waiting for something new, we are continually losing at least thirty per cent. of all the gold produced.

We have any amount of mines, rich in gold, which lie idle for the want of proper machinery to save the gold; but I assure you, Messrs. Editors, there is no difficulty in accomplishing that object, if the gold is only contained in the ore. I hope the people in Grass Valley may be successful with the trial of the Eureka, and give an example to the whole State, even if they are not the first ones who put up Mr. Rittinger's separating boxes, as stated in your last.

J. MOSHEIMER,  
Engineer and Metallurgist.  
San Francisco, Dec. 7th, 1867.

THE Legislature of Washington Territory offer suitable rewards in favor of adventurers who shall discover gold mines of a profitable and enduring character.

A SINGLE copper nugget, weighing 15,000 pounds, was recently brought from the Lake Superior region to Pittsburg.

[Written for the Mining and Scientific Press.]

## Partzite—A New Mineral.

[By ALBERT ARENTS, Mining Engineer and Metallurgist.]

This mineral was discovered early in the year 1865, in the Blind Spring Mountains, situated in Mono county, California, and first denoted as a silver ore, by Dr. A. F. W. Partz, for which reason I have applied to it the above name.

It has hitherto never been found in crystals or of a crystalline structure, but always in amorphous masses, generally without luster, and rarely of a glistening appearance. Its fracture varies from conchoidal to even, and its color from yellowish-green to blackish-green, and black; the lighter-colored portions containing the most silver. Oftentimes the mineral has considerable resemblance to the product obtained during the middle of the raking period in cupellation. The amount of silver it contains ranges between four and twelve per cent.

In the veins of the Blind Spring District, the Partzite occurs in irregular deposits, which are often nodular in shape, and occasionally occupy, for a distance of many feet, the whole width of the veins.

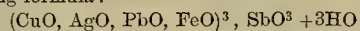
Its Sp. Gr. is 3. H.=3-4. Before the blow-pipe, on platinum, it is smelted, but with difficulty, to a black slag; on charcoal, and especially by adding soda and pulverized charcoal, a metallic button is easily obtained, which bears much resemblance to pure antimony.

So<sup>3</sup>, C H and No<sup>3</sup> decompose the mineral, even in the cold, evolving oxyd of antimony and forming a copper-silver solution.

An analysis of the mineral showed the following composition:

	Relation of Oxygen.	Relation of Equivalent.
SbO <sup>3</sup> = 47.65	7.47	7.47 ÷ 24 = 0.311 = 1
CuO = 32.11	6.47	
AgO = 6.12	0.42	
PbO = 2.01	0.14	7.54 ÷ 8 = 0.942 = 3
FeO = 2.33	0.51	
HO = 8.29	7.37	7.37 ÷ 8 = 0.921 = 3
	98.51	

From the above it will be seen that for 1 eq. of acid there are 3 eq. of bases, and 3 eq. of water. We thus obtain the following formula:



Of arsenic but slight traces were detected, which, however, in all probability were due to the presence of fine reticulations of a brilliant green color, by which the mineral is more or less interwoven.

The Partzite occurs, together with argentiferous galena, in veins of a magnitude varying from nine inches to eight feet, and has already become the object of extensive mining operations.

THE GREAT CHICAGO LAKE TUNNEL, for supplying water to the city of that name from Lake Michigan, is now completed, and the inhabitants are congratulating themselves over the prospect of an early supply of pure water. This tunnel may be considered as among the boldest engineering feats of modern times. It has been pushed out under the lake, through a strata of firm blue clay, for a distance of two miles. It is secured by brick walls laid in hydraulic cement, and is elliptical in sectional form. The water is taken from the lake at a depth of thirty feet. It will be made available as soon as suitable reservoirs can be made, into which the water will be pumped for supply of the service pipes. The urgent necessity for that work may be inferred from the following paragraph which we clip from the Chicago Railroad Gazette:

The only universal regret is that it cannot be speedily put to practical use, for water fit to drink was never more needed than now. The pipes are full of stinking fish and decomposed substances of various kinds, and the city is suffering from a nuisance that an impossible number of filters can alone abate. The sooner it can be got in working order, the better for the health and comfort of the city. There may be "water everywhere," but there surely is "not a drop (fit) to drink." Give us the pure lake water first, and celebrate afterwards.

## The Chloride of Sodium Process.

Mr. J. K. Wyckoff, formerly of Georgia, is now working ores at his reduction works, foot of North Third street, Brooklyn, by means of his recently patented chloride of sodium process. The machinery used consists of a wooden cylinder—like the old Indian tree-cradle that many of our California readers will remember—and a shaking table, with the ordinary mechanical appliances for working them. The process is as follows: Two hundred pounds of finely crushed ore is put into the cylinder or amalgamator, with about one hundred pounds of mercury and sixty gallons of water, to which three per cent. of salt is added. The cylinder is then set in motion, rocking backward and forward. Steam is now let in through a pipe, and in about eight minutes the water boils, and the mercury permeates the entire mass. Forty-five minutes having elapsed, a stream of cold water is let in, which suddenly cools the mass and precipitates the mercury. The gate at the end of the cylinder is then opened, and a stream of water run through the cylinder, until it comes clear, when the gate is closed and a new charge is put in—the mercury still remaining in the cylinder. The shaking table at the end of the cylinder is simply to work the debris, and retain whatever mercury may come over with it—which is found to be very trifling. It is claimed that the results produced by this process of amalgamation are wonderful—many of the most refractory ores of Colorado, California, Virginia and North Carolina have been worked and made to produce from \$100 to \$1,300 per ton; that such results as are afforded by his process cannot be produced by any other; and that in many instances the tailings of other processes have been thus worked by him and made to yield astonishing results. We all know that particles of gold, when fine enough, will float in water and even in the air, and that much of it is lost by the old process. All this wastage Mr. Wyckoff declares he can obviate by his chloride of sodium plan of amalgamation. Our readers can, however, judge for themselves.

We clip the above from the American Journal of Mining, of New York, of June 16, 1866; which paper, also, contained an illustration of the machine. In a subsequent edition of the same paper the editor says:

Some months ago we illustrated and described a "chloride of sodium process," which many years ago had been stumbled upon in the course of some experiments made by Mr. John Wyckoff, at his gold mines in Virginia, and since tested by him to a very considerable extent. We have recently heard more of it, viz.: that it has been tried at the Holman mill, Black Hawk, Colorado, by Professor Bradford, who found that the tailings of that mill yielded from \$100 to \$500 per ton by this process; that Engineer Aitken has tried it in Montana, and found it produced from the rock he tested an average of \$400 per ton; some of it going as high as \$8,000; that number of scientific gentlemen, as well as many practical millmen, have taken ores to be treated at Mr. Wyckoff's Reduction Works in Williamsburgh, and after working them in batches of 200 pounds to the charge, with their own hands, have been absolutely startled at the results; and that some thirty mining companies, operating in different parts of the country, have decided upon adopting it. Many of the miners and millmen will probably doubt whether such results can be obtained as Mr. Wyckoff's books show, for they are really marvelous, but let them take 200 pounds of ore with them, and their own quicksilver and salt, and manipulate the batch with their own hands at his works, and they will probably be as much astonished as was our friend Dr. Stevens, who tells us he obtained by this process double the yield given by any other.

FLAXSEED IN OREGON.—Last year, twelve hundred bushels of flaxseed was raised in Oregon by the Pioneer Oil Company. This has all been loaned by the company to the farmers, on condition that the crops of this year should be sold to the company at the market rates.

HORACE GREERLEY offers to pay \$200 to the first and \$100 to the second township of not less than 100 houses that shall have at least two well planted, thrifty grape vines to each dwelling.

NINE thousand pupils in the Cincinnati public schools are taught German. The Teutonic is a large element in the population of that city.



## Mechanical.

## The Properties of Iron and Steel.

Notwithstanding the diversity of opinion with regard to the action of impact and vibration upon the atomic condition of iron, and although some experiments and well attested facts go to show that such action produces no unfavorable effect upon the crystalline condition of wrought iron, there is still another class of experiments and facts which seem to point, with an equal degree of certainty, to the contrary. Bearing this in mind, the following from Professor McGauley, cannot fail to be read with interest:

In considering the fitness of iron as a material for the construction of ships and bridges, and particularly for the latter, that one most dangerous defect to which wrought iron is liable, must be taken carefully into account, namely, its tendency to crystallize, and thus to lose a very large portion of its strength.

It appears from Mr. Fairbairn's experiments, that with constant changes of load, or with the same load, but with constant disturbance of the metallic molecules, from vibration, fracture will, in time, certainly ensue of itself.

It has been ascertained that an iron girder will break with about 400,000 changes of load, accompanied by vibrations; a fact which but too clearly shows that the spontaneous destruction of our iron bridges is but a question of time, and not even of a very long one.

The explanations of this very alarming fact, the danger from which is, unfortunately, not even confined to bridges, but extends to the axles of locomotives and carriages, and to the various portions of machinery which from time to time so unexpectedly give way, is found in the restoration to their primitive forms of the crystals which had been elongated and mutually entangled by the hammering to which the iron is subjected during its manufacture.

It might be supposed that steel, from its tensile strength being so much greater than that of iron, would be, in every instance, far preferable to iron. Such, however, is not the case. If, for example, steel is used in the formation of a girder, its thickness may be much less than if iron were used. But this very circumstance, as it is almost equally liable to oxidation, causes its strength to be impaired with much greater rapidity.

Thus, a plate of iron half an inch thick is much less weakened by oxidation to the depth of the sixteenth of an inch than a plate of steel, which at first is only a quarter of an inch thick. In the one case, the strength of the plate is diminished only to the extent of one-eighth; in the other, with the same amount of oxidation, to the extent of one-fourth. In the former case the plate would stand, when in the latter it would be sure to give way.

Again, it might be supposed that steel would answer best where violent concussions are to be withstood, and that, therefore, it would be an excellent material for armor plates. The reverse is, however, true. Steel is strong only when exposed to a force that is slowly applied. A cannon ball which would cause only indentations in iron, or, at the worst, merely pass through it, would dash a plate of steel to pieces, dealing destruction, most probably, to all those in its vicinity.

**DIVERSIBILITY OF IRON.**—Under the general name of iron are included virtually distinct metals, which, in external characteristics, differ far more from each other than some chemically distinct metals. The difference between the ductile wrought iron, the elastic steel, susceptible of receiving very different degrees of hardness by tempering, and the hard, brittle and *unforgeable* cast iron, depends on the difference in the proportion of carbon, though other elements often concur in modifying in a striking degree the qualities of this wonderful metal.

**STEEL RAILS.**—The London and North Western Railway company have already laid sixty-three miles of steel rails on the road, and the work of relaying with steel instead of iron, is to be continued. On the Great Northern Railway steel rails have also been laid at all the principal stations, and on the steepest inclines.

**INDIA-RUBBER RINGS** are now used in packing wine bottles in France. They slip over the bottles, and render breakage impossible. They can be used over and over again.

## A New Desulphurizing Furnace.

The *Denver News* of December 12th, describes a new desulphurizing furnace, lately devised in England, which has already been patented there, and for which application has been made for letters patent at Washington. The description is given substantially as follows, in a letter from Mr. R. O. Old, one of the pioneer miners of Colorado, now on a visit to England:

The principle involved in the furnace, is, that after the ore has been carefully concentrated and crushed, it is slowly but continuously sifted through a sort of hopper or feed box, on its top, so that every particle in passing through the same is so exposed to a heat of the requisite degree for desulphurization, that the metals are completely liberated from the sulphur.

The furnace is a vertical chamber, constructed of fire brick, fitting in which are a series of horizontal bars or barrels, also of fire brick, angular-shaped, with the base of their angles turned upward. These are for the purpose of intercepting and distributing the crushed ore, as discharged from the feed-box, in which the supply is regularly maintained in the passage of the same. By the turning of the bars flat edge up, the powdered quartz collects in heated, but distributed bodies, and rains over, so to speak, all the bars successively, like golden showers, falling through some fifteen or twenty feet of space, which, having filled up, assume a diamond shape, and which the nature and principle upon which the furnace is constructed renders necessary—the ore is collected below, thoroughly desulphurized and drawn out through a grate or hole in the bottom, arranged for that purpose.

But what is most curious about the furnace at first sight, and that which gives and adds materially to its value (economically considered) is that when first started to operating, it only then, and not afterwards, needs fuel—the sulphur in the ores being sufficient to supply all demands for combustion, and the keeping up of a continuous heat ever after, so long as there is a supply of ore, whether for a few hours only, or for years.

The writer, while on his visit to Swansea, reports having seen several of these furnaces in operation, desulphurizing Cornish and Chilian copper ores, and thinks them especially adapted for working the sulphureted gold ores of Colorado.

**RELATIVE COST OF HORSE AND STEAM TOWAGE ON CANALS.**—Considerable attention has recently been attracted on the part of English engineers to a practical experiment of steam towage, which has recently been made on the Gloucester and Berkeley ship canal, in England. The length of the canal is sixteen miles—level from end to end. Until within four years, horses have been employed for towing, at an average cost of one farthing per ton per mile. About four years ago, three steam tugs were fitted up to take the place of the horses. After running four years, 1,059,137 tons had been towed the length of the canal, sixteen miles, at a cost of \$32,000, including fifteen per cent. per annum for the cost of the tugs for interest, repairs, etc. A careful computation shows that this arrangement has effected a saving of *two-thirds* in the cost, as compared with the haulage by horses, with less damage to the canal than was caused by the horses. The speed attained by steam was from three to three and a half miles per hour. The experiment is pronounced a perfect success, and will probably be introduced upon other similar works in other parts of Europe. It is suggested, in view of the above results, that steam towage should be tried upon the Delaware and Raritan canals. There is little doubt but that a system of towage for freight might be most advantageously applied to the entire river and bay navigation of California.

**LIQUID FUEL.**—A steam yacht owned by Mr. Barfi, of Glasgow, has made two trips to Gravesend and back, propelled by steam raised with liquid fuel, without the use of an atom of coal.

**MECHANICS** have worked 600 years on the spire of the cathedral at Strasburg.

## Scientific Miscellany.

## Influence of Silica in the Formation of Vegetable Fiber.

We alluded last week to the fact, that the opinion, which is generally current, that it is from the lack of silica in its stalk that the spear of grain is weak and liable to fall down or "lodge," much to the detriment of the crop, has quite recently been controverted—that the suggestion so frequently thrown out that grain might be prevented from lodging by dressing the soil with some one of the soluble preparations of silica, and so furnishing to the growing plant the supposed desideratum in a readily assimilable condition, will not stand the test of chemical investigation. The subject is one so new and interesting, that we have clipped the following further particulars from an Eastern exchange:

The distinguished French agricultural chemist, Pierre, has recently subjected the whole question to the test of experiment. He finds that the ideas and hypotheses above mentioned are not borne out by facts. As the result of numerous analyses, he finds that of the different parts of the wheat plant the leaves contain far more silica than the smooth portion of the stalk, and the stalk much more than the knots or joints, which prove to be comparatively poor in silica, in spite of their apparent hardness. In equal weights, the leaves contain seven or eight times as much silica as the joints, and four or five times more than the spaces between the joints. The portion of the plant least rich in silica is the lower part of the stalk, at precisely the place where the stiffness and rigidity are most necessary. If, then, silicated manures be offered to the wheat plant, the larger proportion of the assimilated silica will accumulate in the leaves, it follows naturally that grain highly charged with silica might fall down and lodge, while grain exposed to similar conditions, but less rich in silica, might stand firm and suffer no harm.

It has long been noticed that, other things being equal, those samples of grain of which the leaves are most highly developed lodge first. This is not surprising for in this case the foot of the stalk remains shaded, and, as a consequence, soft and feeble, while the enervated stalk is forced to carry an excessive load, which presents a great surface to the crushing pressure of rain and wind. On the other hand, it is notorious that the wheat grown upon poor land rarely lodges, and the explanation of this fact is evidently that, in the absence of vigorous leaves, the stalks, besides having no great load to carry, become hardened by the action of sun and air.

The practical lesson suggested by these experiments is that, in order to prevent the lodging of grain, the farmer must, for the present at least, look rather to improved methods of sowing, by means of which light and air shall always be freely admitted to the stalks, than to any chemical specific which has yet been suggested. In the course of time means may perhaps be found to induce the deposition of strengthening ingredients at those parts of the stalk where strength is most needed, but until that time arrives it will be best to follow the lesson taught by the natural growth of the wheat plant, and not to depart too far from the physical conditions which are essential to its healthy development.

**COMPARATIVE INTENSITY OF LIGHT AS REFLECTED FROM THE MOON AND FROM VENUS.**—On the 20th day of June, 1865, at the hour when the moon and Venus were in conjunction at the city of Lyons, France, M. Chacornac made use of the opportunity to compare the relative intensity of the light reflected from the two bodies. The surfaces taken for comparison were those affording rays at the same angle of incidence; that on the moon was the regions lying between the craters Rocca and Eirehstadt, over the very brilliant surface which lies to the southeast of Grimaldi. It was found that this, the brightest part of the moon, reflected only one-tenth as much light as that reflected from the surface of Venus.

**WATER-PROOF BOOTS.**—It is said that a coat of copal varnish applied to the soles of boots and repeated as it dries, until the pores are filled, will make them water-proof and three times as durable as those not so treated.

## LIQUEFACTION OF CARBONIC ACID GAS.

When carbonic acid gas, at the temperature of the freezing point, is compressed with a power of forty atmospheres, or six hundred pounds to the inch, it liquefies—five hundred volumes being compressed into one. When raised to ordinary summer heat, or 90° F., its resistance is equal to 1,200 pounds to the inch, or double that of the freezing point—the same amount being compressed into the same space in both cases. Of course very strong machinery is required for this experiment; and the experiment is a very dangerous one when attempted by inexperienced hands or with imperfect machinery. A Parisian chemist, named Harvey, was killed while experimenting with the manufacture of this gas under high temperature; the iron cylinder which he employed burst like a bombshell, by the too rapidly developing gas. While the condensation of carbonic acid gas into a liquid, reduces its volume five hundred times, the condensation of common steam to a liquid (water) reduces its volume seventeen hundred times. We believe the only instrument on the Pacific coast constructed for the liquefaction of carbonic acid gas, is connected with the philosophical apparatus of the Catholic College at Santa Clara.

**AN IMPORTANT MEDICAL DISCOVERY** is reported by the *Medical and Surgical Reporter*, as having recently been made by one Augustus Barnes, which is certified to the *Reporter* by Dr. P. W. Ellsworth, of Hartford, Conn. Mr. Barnes, not being a member of the faculty, proposes to secure his discovery for his own use, by letters patent. According to the testimony of Dr. Ellsworth, he is able to remove spots, such as moles, naevi (maternal marks) and other diseased conditions of the skin, by the action of sunlight concentrated through a lens. Dr. E. vouches to having seen the operation on a naevus, covering four or five square inches of the face, of a deep cherry red color, approaching purple, and covered with knobs of condensed tissue an eighth of an inch high. After two applications, every knob had disappeared, the skin had gained a natural color, and, as a deformity, the naevus was practically cured. Mr. Barnes professes also to have removed small tumors, to have produced a true and healthy skin on the surface affected by ichthyosis, (a kind of scaly eruption), and to have high expectations in regard to incipient cancer. To what farther extent in the healing art, Mr. Barnes' magic lens may lead, has not yet been suggested.

**PHOSPHATE OF LIME.**—It is said that a discovery of a bed of natural phosphate of lime has recently been made in the center of the Estramadura, and on the direct line of the projected railroad which is to unite Madrid with Lisbon. The bed is of a mountainous form, very abundant, and easy to be worked by an open cutting. This mineral, known to mineralogists as *apatite*, has hitherto been discovered in only limited extent and in but few localities. Especially is this the case on this continent, where it occurs only in scattered crystals or nodules, or in narrow seams in the limestones, slates or granites.

**A USEFUL HINT** is given by a correspondent of an Eastern exchange, as follows: A tin tube, made like a syphon, driven into the vent of a barrel of wine, or cider, and the other into a bottle of water will prevent the air from entering the barrel, while the gas escapes through the water. Make the barrel otherwise tight. When the wine or cider is done working, the water in the bottle will cease bubbling. It requires no filling up, and there is no loss. I have tried it. The tube can be made by any tin-plate worker, and when once made can always be kept for future use.

**A SOLUTION** of chloride of copper is a test by which gilt articles can be distinguished from those which are bronzed. The latter are stained brown by it, while the former suffers no change.



## WEEKLY STOCK CIRCULAR

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING,  
January 19, 1867.

## CITY STOCKS.

Transactions in city shares have been limited during the present week, and for some time past this class of securities has exhibited little animation. We note several small sales of Pacific Insurance Company at 160, and National at 76½. The San Francisco Insurance Company paid a quarterly dividend of 4½ ¢ cent. for the three months ending with December last, and the California 6 ¢ cent. for the same period.

It appears from the annual statements of several of our home insurance companies that a strictly local business has not been very profitable during the year 1866. This is not to be wondered at, when we take into consideration the number of companies engaged and the amount of insurable property on this coast, which is only about \$75,000,000. This amount, it is asserted, is already covered by the various companies, and that the business of any one could only be extended at the expense of the others.

San Francisco Gas stock sold early in the week at 65, Spring Valley at 60½, and California Steam Navigation Company at 66, and at the close at 61@60.

The French Savings and Loan Society disbursed a dividend of 1 ¢ cent. per month to its depositors out of their net earnings during the six months ending December 31, 1866.

We refer our readers to the following dividends disbursed by the several corporations located in San Francisco since the first instant:

MINING COMPANIES.	Market Value of Shares.	Dividends.
Crown Point.....	\$50,000	\$50,000
Empire Mill.....	216,000	12,000
Hale & Norcross.....	1,000,000	40,000
Imperial.....	600,000	32,000
Savage.....	1,560,000	80,000
Yellow Jacket.....	1,488,000	60,000
Total.....	\$5,704,000	\$284,000

BANKS, ETC.	Capital.	Pr Cent.	Dividends.
Bank of California.....	\$5,000,000	1	\$50,000
California Steam Nav. Co..	2,500,000	2	50,000
San Francisco Gas Co.....	6,000,000	3	30,000
Spring Valley Water Co.....	6,000,000	3	30,000
* State Telegraph Co.....	2,500,000	2	50,000
* Fireman's Fund Ins. Co....	500,000	4½	22,500
* Pacific Insurance Co.....	750,000	6	45,000
* San Francisco Ins. Co.....	300,000	4½	13,500
* California Ins. Co.....	200,000	6	12,000
* Union Insurance Co.....	750,000	6	45,000
* Occidental Insurance Co....	300,000	4½	13,500
* National Insurance Co.....	1,000,000	3	30,000
Total.....	\$23,800,000	...	\$391,500

\* Quarterly—others monthly.

If we add to the above amounts the semi-annual disbursements in dividends to depositors by the Savings Institutions of this city, made during the present month, which we may safely estimate at \$400,000, we obtain a total distribution in dividends of \$1,075,500 for the current month.

## MINING SHARE REVIEW.

The Mining Share market has been characterized by a marked degree of activity during the past week, with, however, little or no improvement in prices of most stocks. So far as we can learn, leading claims in Nevada continue to be regarded with favor, and no abatement of their present yield is anticipated for some time. We note with pleasure that the initial step has been taken by the Empire, Hale & Norcross, and Gould & Curry companies to aid in the prosecution of the work upon the Sutro Tunnel. The first named company subscribed \$15,000, and the last two \$100,000 each.

HALE & NORCROSS—is still held in firm hands, and no sales transpired during the past week. On the 10th instant \$2,800 per foot was bid. The mine of this company continues in a favorable condition, and the returns at present are even better than formerly, the average yield of ore per ton being over \$60 from the first to the 12th instant inclusive, since which time 855 tons have been delivered to the mills. Owing to the moisture of the rock when the assays were made, 65 per cent. of which is obtained from the mills, a reduction had to be made

to said mills for account of December, the actual receipts of bullion having been \$131,135.41.

SAVAGE—exhibited considerable activity during the week under review, opening at \$1,955, advancing to \$1,975, seller 30, receding to \$1,890, rallying to \$1,950, then selling at \$1,960. During the week ending January 12th, 1,016 tons of ore were extracted, valued at \$35,923—more than \$35 per ton. The improved condition of the roads recently has enabled this company to ship an average of 300 tons per day to the mills from their reserves on hand at the mine. The north winze, from the 7th station, is said to be in good ore at a depth of 45 feet. The south winze, same station, at a depth of 75 feet, is leaving the ore to the west. A new winze, near the extremity of the south line, 7th level, is now under way, having attained a depth of twelve feet—showing good ore at that point.

CROWN POINT—has been well maintained, advancing from \$1,400 to \$1,440, then selling at \$1,325—ex-dividend of \$100 per foot paid 15th instant, and closing at \$1,275. For the week closing with the 11th instant, 980 tons of ore were hoisted to the surface, of which amount 722 tons were sent to outside mills. We learn of no material change in this mine recently. The average daily product of ore this week has been about 130 tons. The total yield of bullion the present month it is thought will be about \$150,000.

YELLOW JACKET—has been in rather less favor, receding from \$1,350 to \$1,190—ex-dividend of \$50 per foot, advancing to \$1,220, and then selling at \$1,200, and closing yesterday at \$1,225. The receipts of this company from June 30th last to January 1, 1867, amounted to \$1,596,927.56, being the product of 50,844 tons of ore, averaging \$31.40 per ton; receipts from other sources were \$37,023.33, which, together with the balance brought forward from June 30th, 1866, makes an aggregate of \$1,776,866. During that period \$390,000 were disbursed to stockholders in dividends, and \$1,287,105 were expended for labor, supplies, crushing ores, and various improvements, leaving a net balance on hand January 1, 1867, of \$99,760.58.

GOULD & CURRY—met with trifling sales at \$635@620, receded to \$592, and at the close sold at \$565. The annual meeting of this company is usually held in the beginning of December, but for lack of a quorum to receive a statement of their operations for the past fiscal year, no meeting was held until January 15th, when the following facts were elicited. The total receipts amounted to \$1,720,299.72. The principal disbursements were as follows: Mine, \$502,000; company's mill, \$562,000; outside mills, \$253,600; dividends, \$253,865. Mr. A. Bull, who has discharged the duties of the Presidency with great fidelity and efficiency for some time past, was re-elected by the new Board of Trustees to serve another year.

IMPERIAL—is in better request, selling early in the week at \$148@150, then at \$143—ex-dividend of \$8 per share, rising to \$155, and at the close \$155 is asked. Recent advices from this mine are favorable. In the west drift, on the 230-foot level of the Alta mine, a fine body of ore has been disclosed. In stopping a distance of 20 feet it has widened out materially, with every present indication of an improvement in width toward the west wall of the ledge.

CHOLLAR-POTOSI—has been in less favor, steadily dropping from \$257.50 to \$229, selling yesterday at 222. In drifting north from the first station, new shaft, indications seem to favor the existence of a considerable body of ore. The drift has extended 35 feet thus far, with 150 feet yet to run before reaching the north line. Assays from this deposit of ore are said to average from \$40 to \$75 per ton. During the past week 780 tons were sent to custom mills.

OPHIR—has met with rather more inquiry this week at enhanced figures, rising from \$155 to \$168, and closing at 165. The east drift from the ninth station is now in 400 feet, without any material change. The north stop is 45 feet in height, and is said to show promising looking quartz. The tenth station drift is under way.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,012,332.25.

## NEW PATENTS AND INVENTIONS.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

AN IMPROVED TRAY FOR GAS PURIFYING. Gas purification is one of the most important operations in the process of manufacturing illuminating gas. Hydrated or slacked lime is generally employed for this purpose, which is spread in thin layers of two or three inches upon wooden sieves or trays placed in the purifiers, in tiers one above another, with an intervening space. These trays are formed of lattice work or slats, leaving interstices or spaces through which the gas can easily pass and permeate the loosely laid lime, whereby the sulphureted hydrogen, ammoniacal gas and other noxious vapors are absorbed, and the gas is rendered less offensive in its odor, and much improved in its illuminating qualities. Iron in various forms has been employed for trays, but the gas soon corrodes and destroys them, and while the first cost is considerable, the frequent replacement necessary makes them too expensive for general use. Wood is ordinarily used, but the integrity or strength of the joinings of the slats and other parts is soon weakened by the action of the gas, and requires frequent renewal.

Mr. J. L. Cheesman, 147 Avenue C, New York city, as assignee of the patentee, has introduced an improved tray which obviates the above difficulties, by being cut out of solid wood, whereby all necessity for joints are removed. These trays consist of an arrangement of slats, cut bevel form, by machinery, so that on the upper side in which the lime is spread a very thin opening is left, through which the lime will not fall, while the under side presents a much wider opening, for the ascent of the gas. By this arrangement the gas is more readily brought into contact with the lime, than it can be when perforated sheets of iron are employed. The thoroughness with which gas is purified and rendered free from moisture, is very important as a sanitary measure, to say nothing of the improvement of its illuminating properties.

A NEEDLE CANNON.—HEIT VON DREYSE of Prussia, has invented a needle cannon as a companion for his needle gun. It is composed of two pieces fixed in one carriage; between them the ammunition chest is placed, and behind are seated the cannoners. The rear portion of each cannon opens to receive the cartridge, and the explosion is created by the bombardier leaning on a fork connected with an elastic tompon, which works alternately, firing one cannon now and then next, and so on. The cartridges drop into either piece by a mechanical arrangement. There is no recoil. The guns are invented for field practice, and some of them, a six-pounder notably, have made accurate and destructive shooting at a range of 2,000 paces.

## PATENTS RECENTLY ISSUED.

WAGON WHEEL.—Benjamin M. Esterle, San Francisco, Cal.: I claim as my invention and improvement in carriage wheels the use of a plate, so constructed that it may be used on the inside of the front wheels of a wagon and pass or slip over the lock or friction plate fastened to the carriage, for the wheels to rub against in turning the wagon.

COLLAGE CABINET.—William W. Levering, San Francisco, Cal.: I claim a cabinet constructed as described, and having a door serving for a black-board, and held up by bars, substantially as described.

REVERBERATING FURNACE.—J. M. White-side, San Francisco, Cal.: I claim, 1st, The arrangement of a revolving stirrer in combination with the oven, constructed and operating substantially as and for the purpose described. 2d, A protecting cap, in combination with a shaft, which gives motion to the stirrer, substantially as and for the purposes set forth. 3d, The arrangement of a supply-tank and stop-cock, which is operated automatically from the driving-shaft, in combination with the generator, tube or tubes, and the oven, constructed and operating substantially as and for the purpose described.

An extraordinary story is going the rounds, in reference to a young French girl, who is said to possess a certain singular attraction for objects of wood, such as chairs, tables, etc., which move towards her as she approaches.

Most of the oil wells in Southern Kentucky have been abandoned as failures.

## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers. Jan. 1, 1867.

BEAVER & Co., of North Bloomfield, says the Nevada Gazette, are going to use a Brady & McAllister Locomotive Head Light in their hydraulic diggings, in place of the pitch pine fires commonly used. It is thought that it will give a better light, and be, moreover, cheaper.

AMHERST COLLEGE is soon to have the largest meteoric possessed by any cabinet in America. J. Alden Smith of Denver City, Colorado, has presented a mass of meteoric iron, weighing 536 pounds, to that institution.

DURING the late storm, the telegraph operator at Timbuctoo, Yuba county, received an electric shock, while at his instrument, which for a time paralyzed his right arm.

PARIS EXPOSITION.—The model of an oil well, with derrick, tanks, etc., will be shown at the Paris Exposition.

PACIFIC HYGIENIC HOME WATER CURE, at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated), B. J. SMITH, M. D., Consulting Physician; R. S. MACARTHUR, M. D., Attending Physician; W. G. W. HARFORD, Manager; H. ANDREWS, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-1f

OLNEY & Co., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 313 Montgomery street, San Francisco. nol

NATURAL CURIOSITIES FOR CHRISTMAS.—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shells, and Wax Flowers, besides Feathers, Birds and Butterflies, for ladies' hats, Shells, Sea-weeds, etc. 21v13-gr

Air Pump for Sale.—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN ROACH, mathematical instrument maker, 522 Montgomery street. 21v13-9p

## To Owners of Mineral Cabinets.

A miner in Nevada has a lot of choice Crystals, which he desires to dispose of at reasonable rates to parties who may desire to complete their display of minerals. Address the office of the "Mining and Scientific Press." 19v13-tic



## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

Monday, January 14.

AFTERNOON SESSION.

10 shs Alpha, G. H., at 241 per foot.
10 shs Alpha, G. H., at 210 per foot.
4 shs Alpha, G. H., at 200 p. r. foot, s 30.
10 shs Bullion at 37½ per share s 30.
20 shs Bullion at 39½ per share.
2 shs Bullion at 38 per share.
1 sh Yellow Jacket at 1320 per foot s 30.
1 sh Yellow Jacket at 1300 per foot s 30.
3 shs Yellow Jacket at 1325 per foot.
4 shs Yellow Jacket at 1305 per foot.
5 shs Yellow Jacket at 1307½ per foot.
1 sh Yellow Jacket at 1310 per foot b 5.
1 sh Yellow Jacket at 1335 per foot b 30.
1 sh Yellow Jacket at 1310 per foot.
3 shs Empire M & M Co. at 130 per sh, b 30.
3 shs Empire M & M Co. at 170 per sh, b 30.
12 shs Ophir at 135 per foot, b 4.
5 shs Chollar-Potosi at 235 per ft b 10.
7 shs Chollar-Potosi at 250 per share s 10.
10 shs Chollar-Potosi at 232½ per foot.
17 shs Chollar-Potosi at 250 per foot.
2 shs Chollar-Potosi at 247½ per foot.
5 shs Confidence at 51 per share.
10 shs Confidence at 50 per share.
5 shs Confidence at 50 per share, b 5.
10 shs Confidence at 50 per share, b 30.
5 shs Confidence at 52½ per share b 30.
10 shs Confidence at 50 per share.
2 shs Confidence at 48 per share.
7 shs Cal Steam Nav. Co. at 65 per cent.
2 shs Savage at 1900 per foot, s 30.
1 sh Savage at 1925 per foot, s 30.
1 sh Savage at 1975 per foot, b 30.
8 shs Crown Point at 1430 per foot, s 30.

Amount of sales.....\$224,725 00  
 Tuesday, January 15.

36 shs Ophir at 157 per foot.
48 shs Ophir at 150 per foot.
36 shs Ophir at 160 per foot.
12 shs Ophir at 162 per foot, b 30.
12 shs North S. F. Homestead, 8 per sh.
20 shs Chollar-Potosi at 250½ per ft b 30.
15 shs Chollar-Potosi at 232½ per ft s 30.
20 shs Chollar-Potosi at 214½ per ft s 30.
24 shs Chollar-Potosi at 235 per ft s 30.
5 shs Chollar-Potosi at 237 per foot b 5.
5 shs Chollar-Potosi at 240 per foot, b 5.
20 shs Bullion at 35 per foot.
2 shs Bullion at 34 per foot.
10 shs Bullion at 35 per share.
10 shs Imperial at 143 per share.
16 shs Imperial at 144 per share.
10 shs Overman at 27½ per foot.
6 shs Overman at 27 per share.
10 shs Overman at 28 per share.
3 shs Empire M & M Co. at 180 per share.
1 sh Empire M & M Co. at 183 per sh, s 10.
4 shs Gould & Curry at 635 per foot.
4 shs Crown Point at 1225 per foot.
30 shs Confidence at 46 per share, s 30.
45 shs Confidence at 45½ per share b 30.
60 shs Confidence at 48 per share.
30 shs National Insurance at 75½ per cent.
1 sh Yellow Jacket at 1200 per foot.
1 sh Yellow Jacket at 1335 per foot.
2 shs Yellow Jacket at 1240½ per ft b 10.
5 shs Yellow Jacket at 1220½ per ft.
1 sh Yellow Jacket at 1230 per foot b 5.
2 shs Yellow Jacket at 1237½ per foot, b 30.
3 shs Yellow Jacket at 1230 per foot.
3 shs Yellow Jacket at 1235 per foot.
1 sh Savage at 1900 per foot, s 60.
2 shs Savage at 1900½ per foot s 30.
\$3,160 Legal Tender Notes at 74½ c.
\$5,000 Legal Tender Notes at 74 c s 30.

AFTERNOON SESSION.

90 shs N. S. F. Homestead at 9 per sh.
12 shs Chollar-Potosi at 240½ per foot.
10 shs Chollar-Potosi at 235 per share s 30.
15 shs Chollar-Potosi at 235 per foot, s 30.
9 shs Chollar-Potosi at 235½ per foot.
5 shs Chollar-Potosi at 241 per foot, b 30.
6 shs Savage at 1890 per foot, s 60.
1 sh Savage at 1890 per foot.
2 shs Savage at 1900 per foot.
1 sh Savage at 1900 per foot, b 5.
2 shs Bullion at 35½ per share.
2 shs Overman at 28 per share.
2 shs Empire M & M Co. at 182½ per sh.
4 shs Gould & Curry at 625 per ft, s 30.
4 shs Gould & Curry at 615 per foot s 30.
4 shs Gould & Curry at 620 per foot.
7 shs Yellow Jacket at 1210½ per foot b 30.
5 shs Yellow Jacket at 1210 per foot b 30.
15 shs Yellow Jacket at 1210½ per ft.
2 shs Yellow Jacket at 1215 per foot.
3 shs Yellow Jacket at 1215 per foot s 30.
30 shs Confidence at 44½ per share, b 30.
5 shs Confidence at 45 per ft, b 5.
5 shs Confidence at 45 per share b 10.
1 sh Belcher at 155 per foot.
1 sh Cal Steam Nav Co at 64 per cent s 30.

Amount of sales.....\$176,193 37  
 Wednesday January 16.

96 shs Ophir at 167½ per foot.
108 shs Ophir at 163 per foot.
48 shs Ophir at 167½ per foot.
36 shs Ophir at 168 per foot.
1 sh Bullion at 37 per share.
75 shs Bullion at 33½ per share.
11 shs Savage at 1900½ per foot.
6 shs Savage at 1900½ per foot.
4 shs Savage at 1930 per foot s 60.
3 shs Savage at 1940 per foot, s 60.
1 sh Savage at 1900 per foot s 30.
3 shs Savage at 1900 per foot, b 15.
2 shs Belcher at 160 per foot, s 30.
12 shs Belcher at 159½ per foot.
5 shs Chollar-Potosi at 242 per foot b 30.
5 shs Chollar-Potosi at 240 per foot b 30.
10 shs Chollar-Potosi at 232 per foot s 30.
5 shs Chollar-Potosi at 231 per foot s 5.
20 shs Chollar-Potosi at 231 per foot.
17 shs Chollar-Potosi at 232 per foot.
19 shs Chollar-Potosi at 231½ per share

27 shs Confidence at 137½ per share.
10 shs Confidence at 40 per share b 30.
2 shs Imperial at 175½ per share.
15 shs Imperial at 175 per share.
10 shs Imperial at 152½ per share.
8 shs Imperial at 152 per share.
1 sh Yellow Jacket at 1210 per foot s 10.
2 shs Yellow Jacket at 1200 per foot s 10.
7 shs Yellow Jacket at 1240 per foot, b 30.
4 shs Yellow Jacket at 1210 per foot b 10.
6 shs Yellow Jacket at 1192½ per foot b 10.
6 shs Yellow Jacket at 1200 per foot.
2 shs Yellow Jacket at 1190 per foot.
2 shs Overman at 29 per foot.
10 shs Overman at 28 per share.
\$10,000 Legal Tender Notes at 74½ c.
\$10,000 Legal Tender Notes at 74 c.

AFTERNOON SESSION.

12 shs Ophir at 170 per foot, b 15.
10 shs Ophir at 169½ per foot.
65 shs Confidence at 39½ per share b 30.
25 shs Confidence at 37 per share.
5 shs Confidence at 40 per share.
10 shs Confidence at 41 per share.
10 shs Confidence at 42½ per share, b 30.
8 shs Yellow Jacket at 1220 per foot.
20 shs Pacific Insurance at 160 per share.
2 shs Empire M & M Co. at 187½ per sh.
15 shs Overman at 27½ per foot.
10 shs Overman at 27 per share.
8 shs Savage at 1900 per foot s 60.
2 shs Savage at 1900 per foot, s 30.
3 shs Savage at 1925 per foot.
15 shs Chollar-Potosi at 235½ per foot.
5 shs Chollar-Potosi at 235 per foot s 5.
5 shs Chollar-Potosi at 240 per foot b 30.
10 shs Bullion at 33 per share.

Amount of sales.....\$224,725 00  
 Thursday, January 17.

6 shs Cal. Steam Nav. Co. at 63½ per cent.
21 shs Ophir at 175 per foot, b 30.
20 shs Ophir at 170 per foot.
12 shs Ophir at 170 per foot s 10.
12 shs Chollar-Potosi at 225½ per foot.
11 shs Chollar-Potosi at 225½ per foot.
5 shs Chollar-Potosi at 235 per share b 30.
10 shs Imperial at 165 per share.
4 shs Alpha, O. H. at 180 per foot.
35 shs Confidence at 46½ per share.
5 shs Confidence at 47½ per share s 30.
20 shs Confidence at 50½ per foot, b 5.
30 shs Confidence at 51½ per share, b 30.
27 shs Confidence at 50½ per share.
16 shs Bullion at 34 per share.
12 shs Savage at 1920½ per foot s 30.
2 shs Savage at 1900 per foot, s 60.
3 shs Savage at 1920½ per foot s 30.
1 sh Savage at 1950 per foot, b 30.
20 shs Crown Point at 1255½ per foot.
8 shs Crown Point at 1300½ per ft, b 5.
5 shs Yellow Jacket at 1200½ per foot.
3 shs Yellow Jacket at 1200 per foot s 30.
4 shs Yellow Jacket at 1220½ per foot.
1 sh Yellow Jacket at 1195 per foot.
8 shs Belcher at 162½ per foot.
5 shs Overman at 27 per share b 5.
30 shs Overman at 26½ per share.
5 shs Overman at 26½ per share b 30.
2 shs Gould & Curry at 600 per foot.
4 shs Gould & Curry at 605 per foot.
\$10,500 U. S. 7-30 Bonds June issue at 77 c.

AFTERNOON SESSION.

3 shs Empire M & M Co. at 185½ per sh.
1 sh Cal Steam Nav Co at 63 per share.
15 shs Cal Steam Nav Co at 62½ per sh.
23 shs Chollar-Potosi at 220½ per foot.
20 shs Chollar-Potosi at 235½ per ft s 30.
5 shs Chollar-Potosi at 230 per foot, b 30.
60 shs Confidence at 50½ per share.
10 shs Confidence at 48 per share s 30.
10 shs Confidence at 50 per share, b 30.
3 shs Yellow Jacket at 1195½ per foot.
3 shs Yellow Jacket at 1220 per foot b 30.
4 shs Gould & Curry at 590 per foot.
4 shs Gould & Curry at 592 per foot.
108 shs Ophir at 169½ per foot.
14 shs Ophir at 165 per foot.
2 shs Imperial at 151 per share.
23 shs Imperial at 165 per share.
6 shs Savage at 1950 per foot.
1 sh Savage at 1890 per foot, b 30.
13 shs Savage at 1910½ per foot s 60.
2 shs Belcher at 162½ per foot.
35 shs Overman at 26½ per share.
\$10,000 Legal Tender Notes at 73½ c s 30.
Amount of sales.....\$168,305 00

Friday, January 18.

5 shs North S. F. Homestead at 9 per sh.
30 shs Confidence at 49½ per share.
3 shs Confidence at 48½ per share, s 30.
25 shs Confidence at 5½ per share b 30.
10 shs Bullion at 31½ per share.
8 shs Yellow Jacket at 1190½ per foot.
3 shs Yellow Jacket at 1220½ per ft b 30.
2 shs Yellow Jacket at 1197½ per foot.
4 shs Gould & Curry at 565 per foot.
50 shs Crockett at 2½ per share.
45 shs Overman at 25½ per share.
20 shs Overman at 35 per share, s 30.
20 shs Chollar-Potosi at 220½ per foot.
6 shs Chollar-Potosi at 210½ per foot.
10 shs Chollar-Potosi at 215½ per ft s 30.
4 shs Savage at 1975 per foot, b 30.
1 sh Savage at 1975 per foot, b 30.
7 shs Belcher at 162½ per foot.
12 shs Ophir at 164 per foot.
25 shs Sierra Nevada at 6½ per share.
20 shs Cal Steam Nav Co at 60½ per cent.
\$5,000 Legal Tender Notes at 73½ c, s 30.
\$13,500 Legal Tender Notes at 73½ c.

AFTERNOON SESSION.

10 shs Cal Steam Nav Co at 50 per cent.
10 shs Chollar-Potosi at 220½ per ft b 10.
22 shs Chollar-Potosi at 220½ per foot.
10 shs Chollar-Potosi at 222 per foot.
10 shs Chollar-Potosi at 227½ per foot.
2 shs Savage at 1930½ per foot s 60.
3 shs Savage at 1975½ per foot b 30.
8 shs Confidence at 50½ per share.
7 shs Yellow Jacket at 1200½ per ft b 30.
1 sh Yellow Jacket at 1230 per foot.
2 shs Yellow Jacket at 1225 per foot.
12 shs Crown Point at 1275½ per foot.
10 shs Bullion at 30 per share, s 20.
6 shs Bullion at 31 per share.
15 shs Bullion at 31½ per share b 5.
12 shs Ophir at 164 per foot.
\$5,000 Legal Tender Notes at 73½ c, s 30.
Amount of sales.....\$139,310 00

## MINING SHAREHOLDERS' DIRECTORY

[Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals].

Comprising the Names of Companies, District or County of Location, Amount of Assessment; Date of Meeting; Day of Payment; Sale, and Amount and Time of Payment of Dividends.

NAME AND LOCATION.	AMOUNT OF ASSESSMENT.	DAY DELINQUENCY.	DAY OF PAYMENT.
Arizona Coas. M. Co. 50c.		Feb 15-March 1*	
Belcher Co. \$15.		Feb 1-March 5	
Belcher Co. \$3.		Feb 1-March 5	
Big Blue Lead G. & S. M. Co. \$10.		Feb 18-March 12	
Bullion M. Co. \$10.		Dec 24-Jan 21	
Cosala S. M. Co. \$1.		Jan 21-Feb 11	
Crown Point, div. 10c.		Payable Jan 15	
Confidence S. M. Co. Storey co. Nev. div. 10c.		Pay July 9	
Central S. M. Co.		Annual Meeting Jan 22	
Cherokee Star Blue Travel Co.		Annual Meeting Feb 2	
Dios Padre G. & S. M. Co. \$3.		Jan 8-Jan 22	
Eureka, San Juan, div. \$1.50 per sh.		Pay Jan 15	
Empire M. & M. Co. dividend.		Payable Oct 8	
Evoca Cons Copper M. Co. 25c.		Feb 20-March 15	
Forest Springs Q. M. Co. \$15.		Jan 11-Jan 30	
George Washington G. & S. M. Co. \$1.50		Feb 9-Feb 25	
Great Central M. Co. \$1.		Jan 26-Feb 14	
Gould & Curry, div. 10c.		Payable Jan 8	
Golden Rule M. Co. dividend.		Payable Dec 20	
Gold Quarrying Co. \$10.		Jan 11-Jan 23	
Hanscom C. M. Co. 15c.		Jan 22-Feb 8	
Hope Travel M. Co. \$1.		Feb 23-March 11	
Hale & Norcross, dividend.		Payable Jan 15	
Imperial G. & S. M. Co. dividend \$8 sh.		Payable Jan 15	
Independent C. M. Co. dividend.		Payable Sept 1	
I. X. L. O. & S. M. Co. \$1.50.		Feb 15-March 4	
Julia O. & S. M. Co. \$1.		Feb 15-March 6	
Josephine G. M. Co. \$1.		Jan 15-Feb 4	
Jederson G. & S. M. Co. \$2.		Payable Aug 21	
Keystone M. Co. Calaveras Co. \$10.		Jan 21-Feb 11	
Kohler Bros S. M. Co. \$1.		Jan 19	
La Blanca G. & S. M. Co. \$1.50.		Jan 15-Jan 31	
London Quartz M. Co. 30c.		Oct 27-Jan 21	
Melones Stanislaus G. S. & C. M. Co. \$2.		Jan 14-Feb 4	
Mount Tenabo S. M. Co. \$2.		Jan 4-Jan 22	
Nouparell O. M. Co. \$1.50.		Jan 25-Feb 18	
Nor S. F. H. & H. Ass. \$12.50.		Feb 12-March 15	
Oxford Beta Tunnel M. Co. 50c.		Feb 4-Feb 25	
Ophir S. M. Co. \$5.		Feb 14-March 1*	
Overman S. M. Co. \$10.		Jan 16-Feb 4	
Ophir S. M. Co. \$5.		Jan 28-Feb 15	
Pacific Coal M. Co. \$5.		Dec 24-Jan 25	
Patrolina and Dolores S. M. Co. \$2.		Jan 5-Jan 21	
Peachock Cop., Nickel & Cobalt M. Co.		Meeting Jan 23	
Rattlesnake G. & S. M. Co. \$1.		Feb 8-Feb 25	
Rattlesnake G. & S. M. Co.		Meeting Jan 25	
Siskiyou M. Co. \$5.		Jan 21-Feb 20	
Santa Cruz P. O. W. 50c.		Jan 8-Jan 28	
Santiago M. Co. dividend.		Payable Oct 8	
Savage S. M. Co. dividend.		Payable Dec 8	
Sierra S. M. Co. \$4.		Jan 15-Feb 2	
Sierra Nevada S. M. Co. \$4.		Jan 15-Feb 2	
Salamander G. & S. M. Co.		Meeting Jan 19	
Summer G. & S. M. Co. \$5.		Feb 11-March 5	
Sapphire Quartz M. & M. Co.		Meeting Jan 28	
Tuchenne Mountain G. & S. M. Co. \$1.		Jan 4-Feb 26	
Texas Plat. M. Co. 25c.		Dec 20-Jan 21	
Tulimfo G. & S. M. Co.		Nov 30-Jan 31	
Yellow Jacket S. M. Co. div. \$50 sh.		Payable Jan 15	

\*Those marked with an asterisk (\*) are advertised in this Journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, JANUARY 18, 1897.	
MISCELLANEOUS STOCKS.	Bid. Asked.
United States 7-10th Bonds, June Issue.....	77 1/2 78 1/2
Legal Tender Notes.....	77 1/2 78 1/2
California State Bonds, 7s, 1897.....	82 1/2 83 1/2
San Francisco Bonds, 10s, 1891.....	100 102
San Francisco City Bonds, 6s, 1895.....	80 82
San Francisco City and County Bonds, 7s, 1891.....	71 73
San Francisco City and Co. Sch'l Bonds, 7s, 1896.....	80 82
San Francisco City and Co. Bonds, 7s, 1892.....	80 82
San Francisco City and Co. Bonds, 7s, 1894.....	80 82
San Francisco City and Co. Bonds, 7s, 1895.....	80 82
San Francisco City and Co. Bonds, 7s, 1896.....	80 82
San Francisco City and Co. Bonds, 7s, 1897.....	80 82
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San Francisco City and Co. Bonds, 7s, 1913.....	80 82
San Francisco City and Co. Bonds, 7s, 1914.....	80 82
San Francisco City and Co. Bonds, 7s, 1915.....	80 82
San Francisco City and Co. Bonds, 7s, 1916.....	80 82
San Francisco City and Co. Bonds, 7s, 1917.....	80 82
San Francisco City and Co. Bonds, 7s, 1918.....	80 82
San Francisco City and Co. Bonds, 7s, 1919.....	80 82
San Francisco City and Co. Bonds, 7s, 1920.....	80 82
San Francisco City and Co. Bonds, 7s, 1921.....	80 82
San Francisco City and Co. Bonds, 7s, 1922.....	80 82
San Francisco City and Co. Bonds, 7s, 1923.....	80 82
San Francisco City and Co. Bonds, 7s, 1924.....	80 82
San Francisco City and Co. Bonds, 7s, 1925.....	80 82
San Francisco City and Co. Bonds, 7s, 1926.....	80 82
San Francisco City and Co. Bonds, 7s, 1927.....	80 82
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San Francisco City and Co. Bonds, 7s, 1930.....	80 82
San Francisco City and Co. Bonds, 7s, 1931.....	80 82
San Francisco City and Co. Bonds, 7s, 1932.....	80 82
San Francisco City and Co. Bonds, 7s, 1933.....	80 82
San Francisco City and Co. Bonds, 7s, 1934.....	80 82
San Francisco City and Co. Bonds, 7s, 1935.....	80 82
San Francisco City and Co. Bonds, 7s, 1936.....	80 82
San Francisco City and Co. Bonds, 7s, 1937.....	80 82
San Francisco City and Co. Bonds, 7s, 1938.....	80 82
San Francisco City and Co. Bonds, 7s, 1939.....	80 82



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner* of January 5th: Although we have not learned the result of the recent working of Morning Star ore, at the Washington mill, but learn that a party who made a bet that it would go over the sum of \$125 per ton, have won. The mill is now pounding away on ore from the George Washington mine at Silver Mountain. This ore needs roasting, too, but not near so long as that from the Star. It is said the company can now get out sufficient to keep their mill running, and probably the concentrators on the Star will erect works nearer by for the reduction of their ores.

One day this week the workmen in the Tarshish tunnel cut a spur of very fine looking quartz, running in the right direction to be a feeder from some ledge ahead.

A blast was put in yesterday at the Mowyer, disclosing some very fine ore.

The Leviathan is proving itself a whale, indeed, among mines. Some miners who visited it yesterday, report that a drift to the left from where the black ore was found shows the vein to be raising and enlarging, and that the small veins of \$2,000 ore are becoming more numerous.

The *Chronicle* of January 5th, says: The Morning Star ore worked at the Washington mill, was the yellow, second class ore; and adds: "Unless a 'freeze-out game' is inaugurated to curse our country, there is no reason why a constant stream of billion should not flow from Alpine county after spring opens."

## Anador County.

The *Ledger* of Jan. 12th says: Frank McBride and three Italians, whose names we do not know, struck a rich quartz lode the other day near Pine Grove. The lode is good sized and very rich in free gold.

## Calaveras County.

From the San Andreas *Register* of Jan. 12th: We saw a nugget taken from Messrs. Marshall & Showalter's claim, a day or two since, on Donglass' Hill, of pure gold, weighing a small fraction less than ten ounces. These gentlemen inform us that lumps of from half an ounce to two ounces are quite common. They are down 134 feet, on what evidently has been an old river bottom, and are drifting upon the ledge. About two feet on the bedrock is "pay dirt." They inform us that Messrs. Gilchrist & Co. their next door neighbors, are doing first fate.

From the Copperopolis *Courier* of Jan. 5th: The Angels Quartz Mining Company completed their new 30-stamp mill last Monday, and it is now running in full blast. This company will employ in the future from 80 to 100 men. Attached to the mill is a patent crusher, capable of preparing for the stamps 100 tons per day. Boven & Co. have recently added new machinery for saving gold, to their mill, and are doing a profitable business. The vein is large and well defined. Stickles & Co., of the Union Company, are now doing better than ever before. They are also sinking the principal shaft as fast as possible, and find a decided improvement of the vein as it is followed downward.

At Carson Hill, Davis & Co. are preparing to put up a 20-stamp mill, which will be completed early in the spring. Southwell & Co. are also making preparations to put up a 20-stamp mill, and intend to complete the same at the earliest practicable moment. The above mentioned mines are all on the Mother Lode of California.

## El Dorado County.

From the Placerville *Democrat* of January 12th: Four tons of top rock, considered the poorest, from the Gillenwater ledge at Poverty Point, were crushed this week, and yielded thirty-eight dollars. When we take into consideration that the mill at which it was crushed has not been in use for some time, that the plates were warped and the machinery imperfect and out of order, the yield is something to boast of.

A Brownsville correspondent, writing under date of the 9th instant, says: "The Georgia company, near this place, are sinking a shaft on the extension of the Independence, and at a depth of eighteen feet struck very rich ore. The ledge at this depth is about one foot in width. The Missouri company are opening their mine. Their ledge, for a distance of two thousand feet, varies in thickness from three to six feet, and prospects well. The Stillwagon company have started their mill, and are now running day and night. They have a good ledge, but a poor mill. The Independence company are running a tunnel to strike their ledge seventy feet below their present works."

A Goorietown correspondent of the same writes that the tunnel on the Bohannon ledge is now in seventy feet. The Taylor ledge, about one mile south, was purchased some three months since by Mr. Green, of San Francisco, who has been at work erecting buildings and machinery to work the ledge, and have now got things in good working order. There is an incline started on the ledge five by ten feet in the clear, well timbered, which is now down thirty feet. The ledge is about eighteen inches wide.

The Collins company, about a mile east of the above, are prosecuting the work on their tunnel and will soon be into the ledge. The Alpine company are not working at present, but will resume in a short time. Surface mining is being prosecuted with considerable vigor, and more extensive than for years before.

From the *Courier* of January 12th: Work on the old Poverty Point mine is being prosecuted to some extent, although the mill is not running. The ledge is about nine feet wide, and the rock assays \$300 per ton; yet it cannot be profitably worked without proper apparatus for saving the gold. Mr. White has a 10-stamp mill upon it.

Stewart & Hall have erected an 8-stamp mill on their cement claim on Texas Hill, and commenced crushing on Wednesday last. They have a tunnel in 600 feet, and in many places along the tunnel have breasted out or run side drifts for a distance of thirty feet or more on either side. At Smith's Flat, two miles above this city, cement mills have been running for a number of years, with very flattering success, and there can be hardly a doubt that the mines on Texas Hill will pay equally as well.

Mr. Shepherd commenced work on his claim on the 20th of November last, and the third day took out gold to the amount of over \$1,000, since which time he has averaged fifty dollars a day for every day's work done in the shaft. He is now working a cut in a ravine, a short distance from the original discovery where the vein is four or five feet wide, composed of a substance so soft that it can be easily mashed like clay between the thumb and finger, and pays well for sluicing. This is near the surface. As it is followed down it gradually grows harder, and changes into solid quartz, filled with rich sulphurets.

Since the storm has abated, renewed activity is seen throughout this county. Quartz, cement and gravel claims are being worked in all directions. The discovery last week at Dugan's, near Latrobe, is only second to the famous Woodside in richness.

The Decomposed lode is being worked for miles. From the South Fork of the American to Weber Creek, shafts are being sunk on nearly every claim. White & Co. are getting good prospects. Shepherd & Co's claim is paying big. The Nevada company are running a tunnel. Chubb, Napier & Co. took out not four ounces, as we stated last week, but nearly forty ounces. Hall, Leon & Wright Bros. are getting out fine prospects. Collins & Co. are now going down with the fourth shaft. Blair & Co. are opening the old Wynkoop mine. Bee & Murgotten are going down one hundred feet before they rest. Williams & Co. are going down with a shaft near the old Jest House.

Letter from El Dorado: The Union company at Anrum City have lately bought the old Central mine, and are taking out very rich rock. The New York El Dorado company are opening out their mine. They have a good mill. The Montezuma, at Nashville, is to have a mill. Goldy & Buffington are taking rock from the Pocahontas which will pay twenty to thirty dollars per ton. The vein is five feet wide.

A telegram from Placerville, dated January 15th, has the following: The Union Quartz Mining company claim, located near Mnd Springs, has been sold to a Brooklyn (Kings county, New York) company. The deed was filed to-day for record, and calls for \$1,200,000, and has \$1,200 in revenue stamps on it.

A claim was sold to-day on the New Discovery Decomposed Quartz lode for a large sum, not made public, to parties from Gold Hill, Nevada.

## Nevada County.

From the *Gazette* of January 11th: Jacobs & Sargent are now mining quite extensively at Quaker Hill and vicinity. They employ forty men, and keep their pipes running night and day. The Green Mountain mill is crushing cement, and is kept in constant operation.

A tremendous slide occurred at Hunt's Hill on Wednesday. The Gougeye mill, which was erected in a deep hydraulic cut, and close to the high bank, was crushed in and almost completely destroyed. The mill belonged to Goodspeed & Co., and has lately been netting the owners some \$700 or \$800 a week. The mill of the Eastern com-

pany, which is situated a little below, had not been injured up to yesterday morning; but the slide is continuous and gradually approaching the mill, and it was feared that it also would be destroyed.

Same of 15th: We learn that the Oro Fino company, on Bush Creek, have struck remarkably rich rock in their Diamond ledge—one of the series which they are working. The strike was made about thirty feet below the surface, where the ledge is twenty inches in width, free gold being visible through all the main rock. They will commence crushing the rich rock in a few days.

From the *Transcript* of January 10th: The Leocompton mine, owned by J. J. Ott, is located on Deer Creek, a short distance above the Oriental mill. The incline is down about one hundred and ten feet, and the ledge is about six inches wide. The ore now is a solid mass of sulphurets of great richness. Recent assays have been made by fire and amalgamating, and by the first the rock paid at the rate of \$1,500 to the ton.

Same of 12th: We visited San Juan last week. The mines have improved during the year. On San Juan Hill some four or five companies are at work. The New England company has just completed its first run and took out \$3,500. The American company can count to a certainty on taking out from nine to ten thousand dollars after each run of from twelve to thirteen days. The last run yielded them \$10,000. The San Joaquin company, after their last run, cleaned up \$22,000. The gravel claims on the ridge have not yet been worked out by any means. The Manzanita ridge has been opened at both ends and is known to be very rich. The Yuba Tunnel company have run a tunnel from the Main Yuba river below the junction, and will soon be ready to commence washing. At Sweetland, Buckeye Hill, Birchville and French Corral, the mines that are being worked are yielding fair profits. At French Corral a number of the larger companies are at work cleaning up.

Mining on the ridge above San Juan is also lively. At Cherokee little is being done, but the English company at Badger Hill is washing, and during the past year these claims have yielded very large returns. At Bloomfield the French company have struck hard ground in their tunnel; but they have run up a side cut into their lower claims, and are washing with excellent prospects. The most encouraging reports come from every part of the ridge, and it is thought that this will be the most prosperous season for many years.

From same of 13th: A gentleman who traveled through Little York Township last week, informs us that fully twice as much ground is being worked as has been washed for the past two years. Many of the old claims which have lain idle for several years have been fitted up and are being worked.

From the Grass Valley *National* of July 12th: It is proposed to move the office of the Last Chance company to Sacramento. A meeting of the stockholders is called for the 9th of February.

Same of 14th: We learn that the long idle claim known as the Bowery, between the North Star and the New York Hill company's works, is indicating well. Hoisting works and pumps have been erected. The ledge is from ten to fourteen inches thick, and the proprietors are confident of success. The ledge shows gold plainly. In connection with this, we may state that the North Star company are erecting a "pnpet-head" on their new shaft now being sunk on their portion of the ground known as the Laramie claim. This is preparatory to constructing additional works.

A large nugget was picked up on Saturday near the Union Hill company's works, which contains about twenty-one ounces of gold, with just rock enough to hold it together.

EXCELSIOR.—The Meadow Lake *Sun* of January 12th says: At the works of the California company they have over their shaft a building, with a heavy frame, and have thus far experienced no delay or damage from the late severe storms. Their work has continued night and day; they are now down about seventy feet, and indications are already abundant that they are rapidly nearing their main ledge.

The Golden Eagle company intend starting their new mill on the 16th, and judging from the character of the rock, we may expect to hear good returns therefrom.

## Placer County.

From the Dutch Flat *Enquirer* of Jan. 9th: A friend who visited Gold Run on Monday, gives us these items: Our enterprising neighbors at this prosperous mining town are undermining and washing away its auriferous banks with great energy and activity. I counted more than twenty hydraulic companies, all but one or two of which are in successful operation. Nearly all these companies use 300 inches of water

—rarely ever less than 250. One, Messrs. Harkness & Co. use 600 inches. The depths of the banks range from fifty to one hundred and fifty feet, the depth increasing as they advance towards the line of the divide. The dirt at the present depth, is sufficiently soft to yield to the hydraulic power applied and dissolve readily.

An Iowa Hill correspondent of same says, January 10th: The Morning Star company's last clean-up amounted to \$4,800, the result of twenty days crushing; the expenses during this time amounting to \$1,200, leaving the handsome dividend of \$3,600. This claim greatly resembles the once famous North Star claim. The Lebanon company will start a new 10-stamp mill in about two weeks. The Oriental mill, at Wisconsin Hill, has been idle for the past three months.

The same paper speaks of the Hawkins' claim at Gold Run, as having the most thorough and complete arrangements for saving the gold. An alternating succession of flumes and ground sluices, with a fall of 206 feet, secure this end.

The *Stars and Stripes* of Jan. 9th, says the new sulphuret saving machine of Johnson & Smith, which was erected at Mallett's mill, works beautifully.

## Plumas County.

From the Quincy *Union* of Jan. 5th: The Monitor Company are at work in their tunnel, and will keep "pegging" away until they strike the back channel. . . . None of the quartz mills near Greenville are running at the present time; they will all start up again in a few weeks. . . . Bachelor & Co., have again commenced hauling quartz from their ledge, in Cherokee, to Bidwell's mill, in Dixie Cañon, which is crushing it. The rock is paying well. . . . Several of the mining companies at Saw Pit, have been at work washing pay dirt, during the past three weeks. The New York Company took out 300 ounces, the result of one week's washing.

"Observer" writes to same from Crescent Mills: Everything is in a flourishing condition in this section. A new quartz lode is in process of opening. Plumas mine is paying well. The storm did but little damage in this locality. The Crescent Company will soon have the water out of their tunnels.

From the *National* of Jan. 5th: The Last Chance Company are driving away energetically at their deep bank of gravel. The Upper Crust Company, at Independence Bar, are getting flattering prospects—from three dollars to half an ounce to the pan.

Boston & Loring, at Oregon Bar, are taking out from \$500 to \$600 per week. The Chinese Companies are probably doing well.

## Shasta County.

From the *Courier* of Jan. 5th: An assay made last week, of rock from the Pacific claim, South Fork, showed \$228 in gold, and \$172.79 in silver, to the ton. The rock was from a depth of seventy-five feet. The lode is thirteen inches in width, with indications of growing wider as the shaft descends.

Since the freshet, considerable gold has been picked up in the gulches in this vicinity. One enterprising prospector realized \$18 for one day's labor, finding one piece worth \$7.50.

At the last run of the Potosi mill fifteen tons of rock were reduced, which yielded \$1,111.28.

## Sierra County.

The mining property of Cole & Stevens, at Brandy City, has been purchased by Philip Van Rensselaer, of the State of New York, for \$100,000. The property consists of some of the best gravel claims in the county, which will be developed as fast as men and money can do it.

The refusal of the Sierra Buttes mine, twelve miles east from Downieville, has lately been given at \$575,000 to San Francisco parties, who, it is understood, will offer it for sale in New York.

## Siskiyou County.

From the Yreka *Union* of Dec. 22d: The late rains have so raised Scott river that the miners at Scott Bar, have been compelled to stop all work in the claims for the season.

. . . McAdams creek is rising very fast from the recent rain. Mining, however, has not ceased.

Same of 29th: Extensive preparations have been made for working the Mexican lead on Humbug. Everything is in readiness, and immediately after New Year's they will commence operations. . . . It is reported that the Chinese miners on Greenhorn have met with better success this year than usual. Several of them have made their fortune, and are about to leave for their homes in China.

## Yuba County.

From the North Californian of January 12th: The Brown's Valley mines give greater promise than ever. The Pennsylvania is now in the full tide of prosperity. It has completed the erection of its new machinery,



which is of the largest and most improved pattern, at an expense of \$25,000. The shaft is 480 feet in depth. They have an eight foot ledge of fine rock. Since the first of January they have been taking from the plates about fifty ounces of amalgam every twenty-four hours. The batteries are not cleaned up until the end of the month. The old machinery has been removed to incline No. 2, in which, at a depth of 190 feet, they have a ledge of good pay rock two feet in width.

The Jefferson company are working upon a fine ledge of rich rock, and a drift running north from the incline at a depth of 490 feet. The machinery is of the best. The engine alone cost \$16,000. The Pacific and Daniel Webster are being developed with great energy.

The Sweet Vengeance is inactive—a game of freeze-out, we are told, being played by its owners.

At Park's Bar, three miles distant, the ravine claim of Messrs. Wessels & Co., McQueen's Rocky Hill claim and the Turfrey claim, are all being successfully worked.

There are within a distance of three miles about 250 Chinamen mining profitably, distributed about as follows: At Park's Bar, 75; Long Bar, 75; Poverty Bar, 20; Prairie Diggings, 80.

At Seabby Hill, about a mile distant, the Bare Ripe and two or three other companies are developing promising ledges of quartz.

#### BRITISH COLUMBIA.

We have the following telegraphic news from New Westminster, January 9th: News from Cariboo represents mining matters in a very flourishing condition. The Heron claim on Grouse Creek yields dividends ranging from \$200 to \$500 a week to the share. The Old Welsh washed up in one day 250 ounces; the Australian is panning out fifty ounces a day steadily. There will probably be few, if any, claims lying over this winter, as the weather thus far indicates an open season.

#### COLORADO.

From the *Transcript* of Dec. 19th: An incorporated tunnel company has just been formed to operate extensively in the mines of James Creek district, with Gen. Bela M. Hughes at its head, which will at once commence the work of running extensive tunnels, and other operations for mining largely. Over the point where they are starting their tunnels is a wonderful "blow-out" of ore, containing gold, silver, copper and galena, and by running tunnels into the mountains they expect to strike a large number of lodes at a great depth. Coal, wood and water are all perfectly accessible to their works.

From the *Denver News* of Dec. 26th: The great average richness of the ores of Red Mountain district, has been demonstrated by many assays. The Hattie Jane lode, owned by William H. Morse, and others, carries free gold to such an extent, that an ordinary sample of its ores yielded by the common stamp mill process, \$160 to the ton. The Lane lode, by assay, returns \$600 in gold and silver, per ton. Forty-seven assays from as many different lodes in this district, made by Messrs. Behr & Keith, gave an average return of \$120 per ton. Many of the lodes are very rich in copper; among the most remarkable of these, there is one that shows seventy-seven per cent. of its material to be copper, and yet gives by assay the rich return of \$420 in gold, and \$20 in silver.

Letter to same from Columbia City, Ward district, has the following: Times are rather dull at present, but bid fair for the better in less than a month. The burning of the Ni-Wott Company's mill caused a drawback for a few days. Big things are expected as soon as the new mill is running again. The company will commence rebuilding in the course of two weeks, the machinery suffered no serious injury from the fire. The first lodes of the district are the Columbia, Philadelphia, Comet, Tubbs, Manhattan, and a number of others not yet fully defined. Several mills will be erected as early in the spring as possible. I am of the opinion that this district will prove herself equal to any other in the mountains; it is young and has never received much attention or notice from practical miners. Work seems to be plenty, not many idlers to be seen. Board per week \$10; wages \$4 per day.

From the *Register*: The Kipp & Buel mill is running on Gunnell ore, and also on ore from the Kansas lode. The work on the Leavitt lode is progressing rapidly, the shaft having attained the depth of 115 feet. Mr. Keith has purchased a quantity of Gunnell ore, and is running about nine cords per week with fine results. Mr. Dubois is working on Fiske ore, and is running about nine cords per week. His mill is now in fine working condition. A new stamp mill is being erected in Black Hawk, just above Lyon's works. It will contain eighteen

stamps at present, being intended for twenty-four stamps. It is intended to run on Peregrine ore.

The Gunnell Company have just taken 133 ounces of amalgam from one Bertola pan after a run of forty-eight hours. They are now running sixty-seven, having engaged the twelve stamps of Kipp & Buel, of which they now have only six. Their own mill on the Nevada road will shortly be in operation. Their last semi-monthly report showed a yield of 389 ounces from 47½ cords of ore. The report previous showed a yield of 408 ounces from 45½ cords. The profits of the company are now about \$1,500 per week.

Mr. Van Tassel has lately run one and a half cords of Fairfield ore in the Chase Company's mill, from which he obtained fifteen ounces of gold, valued in currency at \$330.

#### IDAHO.

From the *Owyhee Avalanche* of December 29th: The Shoenbar mill made a start on Monday of this week. Every thing looked business-like—teams were unloading more rock, and all things were promising. Quite a number of Owyhee people were present at the starting.

From the *World* of December 15th: A letter from Pioneer City has the following: The water has been turned out of the ditches, and our miners have gone into winter quarters, satisfied with the past season's work, and hopeful for the next. But little work will be done this winter except in quartz and deep diggings, and getting out timbers for tunnels, etc.

Wilson & Co's ditch will be extended a distance of three miles early in the spring. It will cover a large scope of country not worked heretofore. The price of water will be reduced twenty per cent.

#### MONTANA.

From the *Post* of December 22d: The last clean-up of Turnley's mill was about \$3,000, from Whitlatch Union ore. . . . Whitlatch, out of eleven ounces of rock taken from his lode, took out nine dollars. . . . There has been a new gulch struck somewhere in the vicinity of El Dorado Bar, on the Missouri. Fifteen dollars, we hear, is about the average to the pan of dirt. No particulars until after the stampede is over.

Helena items: The most favorable reports continue to come from the Salmon River mines. There are a large number of miners who have built cabins for the winter, and a general stampede may be expected next year. A reliable gentleman states that he worked out on the 11th instant \$20.81 in three hours, and on the 12th instant, \$19 in the same time.

Mr. Laird is bringing a ditch from Oro Fino Gulch, which will be finished and in running order in about a week. The ditch is capable of carrying two hundred and fifty inches of water, and should the weather continue as fine as it is at present, it will make things lively in Dry Gulch. There will be 1,700 feet of fluming to be done.

Letter from Deer Lodge to same says: From Mr. Patrick Corbett we learn that the quartz ledges of Flint Creek district show unusually well, and that the Codova, Camanche, and about one dozen others are being thoroughly developed. From Professor Dedesheimer of your city, who has visited this district, we would infer that the surface indications are equal, if not superior to those of the far-famed Rattlesnake region. Mr. C. also informs us that the gold ledges of upper Flint are supposed to be of a superior quality, and that the prospects for "Henderson's" being a good camp the ensuing season are very flattering.

#### NEVADA.

##### Esmeralda.

From the *American Union* of January 6th: The miners are still sinking on the Juniata mine, and, as we are informed, with very good prospects of opening a permanent and paying lode.

In Pahdet district we learn that the mines are being worked as well as could be expected, considering the amount of snow they have had to contend with. Governor Blasdel is interested in the district, and promises to assist them in erecting a mill in the spring. Several tons of the ore have been worked in Aurora, and paid handsomely, and the company feel confident that with reduction works at the mines they will prove valuable.

##### Humboldt.

From the *Register* of January 5th: The General Grant ledge was recently bought by the Pioneer & Iuskip M. & M. Co., of New York. Mr. Fall has just worked two tons of rock from the ledge, procuring thirteen pounds of crude bullion which he is confident is worth about eight dollars the pound.

From the *Salt Lake Velleite* of January 5th: We learn from the Messrs. Day and others, just arrived from Palranagat, that Mr. Raymond, the agent of the Pioneer company, which is an organization composed

of New York capitalists, who have recently invested a great deal of money in this region, has made large investments. The last amounts to \$150,000. The mill at Hicko Springs is working the ore of the Illinois lode with great success.

##### Reese River.

From the *Reveille* of December 31st: The Keystone mill closed on Saturday for repairs, which will probably occupy a fortnight. An efficient crusher will be added, and the mill is expected to crush at least three tons more in a day than heretofore.

Eleven tons of ore from the Woods and Buel location on the High Bridge, in the Silver Bend district, just reduced at the Keystone mill, yielded \$2,289, averaging about \$211 per ton. Four tons from the Eureka district, sixty miles east of Austin, reduced at the same mill, yielded about \$600.

We are informed by persons just arrived from Hot Creek that the 10-stamp mill of the Combination company had let its stamps fall on Friday morning, and is now fairly in motion reducing the ore of the district.

From same of January 3d: Mr. Charles Durning arrived in town yesterday afternoon, from Cortez, with 1,600 pounds of bullion from the mill of the Mount Tenabo company. We learn that this amount was produced in twenty-eight days, of twelve hours each. The mill is ill-arranged and poorly furnished. The ore is packed a distance of eight miles from the mine to the mill, at a cost of ten dollars per ton. We understand that the entire expense of mining and milling the ore rates from thirty-five to forty dollars per ton. Work has been suspended, but will be resumed within sixty days.

From the same of January 4th: Thirty-five hundred ounces of bullion were yesterday brought into town from the mill of the Twin River company.

The "Nevada Giant," in Lander county, seventy miles northeast of Austin, is, in our belief, one of the most wonderful silver veins in the world. It is imbedded in Mt. Tenabo, crops out 3,000 feet above its base, and with a width of 400 feet, stretches itself out in plain sight to the length of 18,650 feet. On this giant vein twenty locations have been made, with the following names and dimensions: Commencing at its greatest point of altitude is the Chieftain, Genesee company, 1,400 feet; Murphy company, 800; Gill company, 800; Taylor & Passmore, 800; DeWitt & Co., 450; St. Louis company, 2,000; Meacham & Bros., 400; Niagara company, 400; Savage company, 400; Nebraska company, 1,200; Cortez Giant, Mt. Tenabo company, 4,000; Elmore company, 200; Russell company, 600; Continental company, 1,000; Argentine company, 1,000; Empire company, 800; Conn & Bros., 400; Traverse company, 400; and the Anna Burr company, 2,000 feet. The vein has been opened at several points along its course, in every case disclosing good mineral. The Gill, Taylor and Passmore, and St. Louis locations, have been worked, the two latter considerably; the Cortez Giant is the most fully developed, and has yielded a large amount of bullion this season. Some work has also been done on the Continental. This huge vein, now so little known, will in time be developed, and will be regarded as among the wonders.

From same of Jan. 5th: Twelve hundred pounds of bullion, valued at \$18,000, was shipped to-day through Wells, Fargo & Co. The larger portion of the bullion was from the Mount Tenabo company, in the Cortez district, and the remainder from the Twin River company.

The mineral tested in the mill at Hot Creek, at its first working, was from the Keystone ledge. Although the ore was of good quality, the result was not satisfactory. Perhaps furnaces will afford the remedy.

Same of 7th: A letter from Reveille district has these items: The excavation made on the Fisherman ledge shows a good body of fine chlorite ore, similar to that carried to Austin and worked at the Keystone mill. The owners of the Etna ledge have run a cut, which develops a good foot-wall, and a large body of excellent ore. The Crescent is looking handsomely, although they have not yet gone across their ledge, but at a depth of twelve feet the character of the mineral had greatly improved. A great many discoveries have been made lately, and everybody seems pleased with the prospect. T. F. Gould, of Hot Creek, has purchased two mines here, called the Silver Star and Circinnatus, and has put eight men to work on them. Messrs. Brobant and Kellogg have made a number of good locations south of the Fisherman ledge, and they are about to erect an arrastra immediately, for the purpose of working their ores. Last week two large springs were discovered within two miles of the locations, which will give ample water for a 10-stamp mill. The

weather is warm and pleasant, and there is no snow in the district.

Same of 8th: Prospectors are fairly rushing to Reveille district. An extension has been taken on the August—one of the original locations—and named the Etna, which is declared to be from thirty to forty feet thick, and exhibiting the finest quality of mineral. A 5-stamp mill is on its way to the district.

A Gardiner Crusher will be immediately added to the mill of the Consolidated company at Hot Creek. It will increase its capacity one-third.

The Metacom works will be closed for a time, for the purpose of adding more barrels. While in operation, the mill worked well. The ore from above the water level averaged sixty dollars per ton; below, eighty dollars.

During the month of December the mill of the Twin River company produced bullion of the value of \$46,700, against \$36,000 produced in the month of November.

"Saxton" writes the *Enterprise* from Belmont: This place affords greater facilities for mining and reducing ores, when the necessary machinery is erected, than any place I have seen in the State of Nevada. If the Comstock lead was situated on the foothills skirting Washoe Lake, on the east, it would not then be located in a more feasible place for obtaining wood and water, or for the erection of machinery, than the prominent leads in and around Belmont are. Water in almost every gulch, wood on every hill, easy of access, and large, valuable, and apparently inexhaustible veins traversing every hill-top, crossing ravines, and coursing every way hither and thither over this vast country, presents inducements to the practical miner rarely equaled, and never excelled.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Jan. 8th: The Kentuck Company are sinking their shaft one hundred feet deeper than it is at present. The Yellow Jacket and Crown Point Companies are also soon to commence sinking deeper. . . . A stream of water was struck in the long tunnel of the Cole Company yesterday. The first rush drove the workmen out. It indicates the immediate proximity of the ledge. . . . The Central mill, which has for a few weeks past been at a stand-still for repairs, started up again yesterday morning.

From same of 9th: The Yellow Jacket Mining Company, yesterday morning, declared a dividend of \$50 on each and every share of the capital stock of the company.

Fifty inches of water is still running from the Cole tunnel. Should it continue, it will be a source of revenue in itself. The prospects of the company are very flattering at the present time.

From same of 12th: The Ophir Company are drifting east from their shaft, in hopes to strike the rich lead now being worked by the Halo & Norcross and the Savage Companies. They have recently encountered an increased quantity of water in their shaft.

The Yellow Jacket Company have opened a fifth level in their old works, at the depth of 600 feet, where they have a good body of rich ore, which they will proceed to take out when the re-timbering of their old shaft is completed.

The Granite mill, which has lain idle for some time past, has been leased by Lem Colbath and others, and is to be thoroughly overhauled and repaired.

From same of 13th: During the past two or three days rumors have been very prevalent of the discovery of a very rich silver ledge in the mountains, about eight miles to the northeast of this city, and several parties have gone out to see about it. Some of the ore is said to assay very satisfactorily. The ledge is about four feet wide, but of the length or depth of it little is known as yet.

From the *Gold Hill News* of Jan. 10th: Yesterday quite a number of Virginians were out to see the new discovery recently made northeast of this place some eight miles. They brought in some of the ore with them, which looks well. Some of it shows free gold. The ledge is from one to three feet in width. Some of the parties who were out to see the mines and with whom we conversed, think well of them.

The Bullion, after drifting in almost every direction, have started a drift to the east, and like the Halo & Norcross, will be very liable to strike good ore, as the pay ore at a great depth, seems to lay well to the east.

The same gives a tabulated statement of the bullion product of the State for 1866. The total is \$16,171,381. The amount shipped from Virginia and Gold Hill, was about two millions in excess over that of 1865.



## Mining and Scientific Press.

W. B. EWER, SENIOR EDITOR.

O. W. H. SMITH. W. B. EWER. A. T. DEWEY.  
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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the MINING AND SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
SAN FRANCISCO, Jan 11th, 1866.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

Mr. S. D. Whittaker, is our authorized Traveling Agent and solicitor from this date. Jan. 1, 1867.

## San Francisco:

Saturday Morning, Jan. 19, 1867.

## Notices to Correspondents.

S. L.—You have lost. Crown and half crown pieces are of much more ancient coinage in England, than the year 1668; as a proof of which, we must at present let the following illustration suffice: "A mint for the coinage of Welch silver was established previous to the reign of Charles I., at Aberystwith. The indenture was granted to Thomas Bushe for the coinage of half-crowns, shillings, sixpences, twopences and pennies, all of which were to be stamped with the ostrich feathers on both sides." The above franchise was granted in the year 1641, and was done for the purpose of encouraging the development of the rich Cardigan silver mines which had commenced working some time previously. It was from mines in the same vicinity that Sir Hugh Middleton obtained, about fifty years previously, the immense wealth which enabled him to construct the celebrated New River. As an appropriate and probably interesting pendant to the above we may add that the English silver penny of Edward III. was ordered to weigh thirty-two wheat grains from the middle of the ear; twenty of these pennies were to weigh an ounce, and twelve ounces a pound; eight pounds were to be equivalent in weight to a gallon of wine, eight such gallons to a bushel of wheat, and eight bushels a quarter. A very rude mode of fixing a standard of value, as the weight of a gallon of wine varies greatly, accordingly as the saccharine matter of the grape had been formed into alcohol, and again, as the latter might have become converted into vinegar.

"INCREDULOUS" may disabuse his mind of the impression that the asserted attempt which it is purposed to make shortly near this city, of practically proving the feasibility of navigating the air by means of steam, is a hoax. Whatever may be the result, we can assure our correspondent that the projectors and designers are serious. In the course of the present week, we have seen a party who had the day previous been to Shell Park on business connected with the contemplated attempt, and we are assured by him that advantage is being taken of the present favorable weather, in order to push matters forward as rapidly as possible, so that in a very short time the public will have the opportunity of judging of the feasibility of the scheme, equally with the projectors. We are not sufficiently well informed ourselves, on matters connected with the construction of the *Avitor* to form any opinion on the matter; all that we can state is that several persons whose practical knowledge is considerable, think that the trial will prove not to be a failure, but on the contrary quite as great a success as can reasonably be expected for a first attempt.

"J. W. C.," of Newcastle, Placer county. We have sent you an illustration of the "Chloride of Sodium Process," about which you inquire. We have also given a full description of the same on page 34 of the present issue, for the benefit of our readers generally.

"L. B. C." of Smartsville, writes us to describe the *modus operandi* of blasting by electricity. We will endeavor to do so next week.

ARTESIAN BORINGS FOR OIL in California have been almost entirely given up, and the plan of securing the seepage of the springs by means of tunnels adopted.

## California Academy of Natural Sciences.

This Association held its Thirteenth Annual Meeting on Monday evening of last week, on which occasion the attendance was the fullest ever witnessed since its organization. The principal business of the evening was the election of officers, the result of which was given in our issue of last week. Our present purpose is to call the attention of the public to the condition, the importance and the needs of this Institution.

During the chief portion of the existence of the Academy, and indeed up to the last year, it has struggled along with scarcely a score of members, very few or none of whom, have had the good fortune to be numbered among our wealthy, or even well-to-do citizens; yet these men have continued, year after year, to labor with untiring diligence, and to devote their money and their time to the promotion of science and the development of the natural history and resources of the Pacific Coast, until they have at length accumulated a vast amount of information of the highest importance to its scientific and industrial development, the chief part of which has been published from time to time, until three volumes of printed matter have now accumulated. The value of this information has been fully recognized by scientific men in the Atlantic States and Europe, who have eagerly, both in their individual capacity and as scientific bodies, sought for the publications of this Association, until its first volume is now entirely exhausted, and the second nearly so. The Society has collected a cabinet of several thousand minerals, nearly 4,000 conchological specimens, botanical specimens almost without number, and the most of them entirely new to the botanical student, together with some 1,500 specimens of paleontology, illustrative of the age and character of our geological formations. By a system of exchanges and donations, chiefly from members, they have also collected a scientific library of considerable extent and inestimable value, comprising some of the recent and most valuable scientific publications of the day. But very few of the books can be found in any other library on the Pacific Coast, and many of them could not be purchased at all, in the ordinary way of trade. All this has been accomplished by the unaided exertions of about a score of men, all told, who have devoted their time and money for this purpose, gratuitously, or for the mere love of science and of scientific progress.

Thus far the Association has labored along, almost unknown and unnoticed by our money-getting citizens. Having no popular demonstrations in its programme of operations, it has hitherto failed in attracting the public eye, meeting only the sympathies of a few plodding devotees of science in our midst, or such of that class as have, from time to time, visited our city. Hence, it is probably to-day better known in Europe than in California. But, thanks to the progress of human events, and the spirit of scientific inquiry which, within the past year or two, has been rapidly gaining ground in this gold-getting State, a better day is about to dawn upon this important and meritorious Institution. During the past year the membership has more than doubled, and is still constantly increasing. One year ago last October, the great earthquake so shook up the dingy, dilapidated old shell in which the Association was allowed to meet, rent free, for the reason that nobody else would meet in such a place, that even the California Academy, poor as it was in purse, did not dare to stay there any longer, and risk, within such rickety walls, the precious collections which it had brought together with so much care and pains-taking. So the Curators packed up the various valuables under their several charges, which, together with the library and fixtures, were stored away for safe keeping to await the "better time coming;" while the Associa-

tion, with a determination to "never say die," met for some months, on sufferance, in a private office on Montgomery street.

Soon after, prospects began to brighten a little, and the Academy ventured to hire a small room in the fourth story of one of our leading banking institutions.

Prospects still continued to brighten; new members were constantly coming in, until the little room was too small to hold the increasing numbers. It was finally resolved to secure a more eligible place of meeting, and one where the library and collections of the Association could be properly put up, and a reading-room attached. This desideratum has at last been accomplished and the Association met, for the first time, at their new quarters, 622 Clay street, on Monday evening, 7th instant. The two main rooms, which are thrown together by an arch in the center, and which are designed for the Cabinet and for meetings, are fifty by twenty feet, and the Reading and Library Room adjoining, twenty by twenty feet. The rooms are neatly fitted up and carpeted, and the collections will soon be put in order.

We have, in this city, many persons of scientific inclinations, who are not yet members of the Academy, but who might find in its rooms excellent facilities for special research; and who, in turn, might contribute much by their presence, their investigations, and the pecuniary aid derivable from their membership, to help along and render still more useful this excellent Institution; to all such, a general invitation is extended to come in and aid us by their presence and assistance. The benefit will be mutual. Associations of this kind are now ranked among the most important educational institutions of all civilized countries. Hence, they usually receive liberal aid from governments, and wealthy friends of science everywhere. The "Boston Society of Natural History" has received several hundred thousand dollars, in all, from the State, city, and private donations. A single private bequest, that of Dr. J. W. Walker, has added \$250,000 to the funds of that Association.

What the California Academy needs, at the present time, is a permanent building of its own, with suitable rooms for meetings, for lectures, a proper display of its collections, etc. With such accommodations it should, and doubtless would, be appointed custodian of the collections of the State Geological Survey, which, added to the rapidly increasing collection of the Academy itself, would soon comprise one of the most varied and valuable treasuries of the kind to be found in the world. The field of research on this coast is new and rich, presenting a most rare opportunity for procuring desirable exchanges, by which it will be gradually enriched with contributions from every part of the globe.

When such accommodations are secured, and a proper fund provided for their care and maintenance, courses of free lectures on scientific subjects, popularized to meet the wants of the multitude, will be established; the Cabinet, and other collections, with printed catalogues for private instruction, will be thrown open on stated days, and the transactions of the Society published more freely and more in full, with perhaps popularized editions for the purpose of increasing a still more general interest in scientific and useful knowledge—thus making the Academy, what it desires to become, a medium not only for the collection, but also for the diffusion of useful information, and the promotion of education generally. The advantages of such an institution, with its collections, to even the common schools of our city, which might be allowed to visit the rooms at stated intervals, accompanied with proper instructors, could scarcely be estimated in the increased educational interest it would thus infuse into the minds of our youth.

It rests with the public spirit of the peo-

ple of the city and State, and with our legislators, to say how much of all this shall be realized, and how much the "California Academy of Natural Sciences" shall be allowed to do for the honor and improvement of the State. Where are our rich men, who reckon their incomes by scores of thousands annually? Cannot some two or three such be found who would do a noble deed for education and science, and thereby link their names, for all coming time, with what may thus become one of the proudest, noblest and most useful Institutions of the land? Marble palaces will crumble into dust; granite walls and monuments will decay, and the names engraven thereon pass from the memory of man; but so long as the world stands, and literature flourishes, the names of Smithson, of Astor, of Stewart, of Peabody, and many others like them, will live in the grateful recollections of those who, from generation to generation, will be made the recipients of the blessings derivable from their well-timed and judicious application of those favors which fortune bestowed upon them in their life times. It does not need the munificence of a Peabody, or a Smithson, to do a work at this time, which, in a few years by natural aggregation, will increase with the growth of the community to magnificent proportions. A sum, at this time easily within the reach of three or four of our rich men, the parting with which they will never feel, will be sufficient to set in motion the machinery, which will go on, gathering power and influence with its progress, until all that is desirable will have been attained.

PARIS EXPOSITION.—The Committee of arrangements for properly representing California at the Paris Exposition, met on the 12th inst. Mr. Stowe, Chairman of the Finance Committee, reported that it was doubtful whether much money could be collected in the interior at this season, and that it would probably be possible to collect a sufficient sum in San Francisco to defray all expenses. He also stated that Professor Blake, fearing lest the impression might go abroad that he desired a contribution to be taken up to defray his personal expenses, had handed him a letter, which he would read. The letter was dated Jan. 10th, and reads as follows:

Messrs. J. W. Strong, J. Deeth, A. Weill, and I. N. Hoag, Paris Exhibition Finance Committee:

Gentlemen:—Permit me to withdraw my name from your application to the public for funds to pay the expenses of the representation at Paris. I have before stated my aversion to a subscription for my expenses as Commissioner.

It will be inconvenient for me to leave at the earliest date, and remain there until the end of the Exhibition. It is perhaps better, therefore, that I should pay my own expenses, and be free from any special obligations or restrictions. This will permit me to go and return at my own convenience and pleasure, and will not prevent my doing all in my power to serve the State and its interests while at the Exhibition and in Europe. Respectfully, W. P. BLAKE.

Mr. Weill moved that the letter be accepted, but not acted upon till the final report of the Finance Committee should be received. He fully appreciated the motives which prompted Mr. Blake in desiring to have his name withdrawn, but hoped his motion would be sustained.

Mr. Blake stated that the object which had induced him to permit his name to be used was that he understood that it was proposed to make the Commission take an active part in encouraging emigration from Europe to California—an object which, to carry out, would involve a considerable expenditure. But as it appeared from the remarks of the chairman of the Finance Committee, that the people of the State did not take much interest in the matter, it had been abandoned, and consequently he wished to withdraw his name from the list, as he did not desire that it should be supposed that he wanted to collect funds for his own use.

After a lengthy discussion of the matter, during which Mr. Tay filled the chair, at the earnest request of all the members present, Mr. Blake consented to allow his name to remain on the list.



## CONTRIBUTED FOR OUR CABINET.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

132—A "Hair Ball" from the stomach of an ox. This ball is in the shape of an oblate spheroid, and weighs, perfectly dry, 10 ounces. Its greatest circumference is seventeen inches, its smallest circumference, fifteen inches. Its greatest diameter is  $5\frac{1}{4}$  inches; its smallest,  $3\frac{1}{4}$  inches. Its size is larger than is usually met with. It was taken from the stomach of a three year old ox, which, when killed, was apparently sound and healthy, and was killed for beef. It was sent to us by Mr. D. B. Rickey, of Ione Valley, Amador county.

Accretions of this kind are frequently found in the stomachs of ruminating animals. We believe they are always found either in the first stomach or paunch, or in the fourth, which is the last stomach. They are generally round, or nearly so; but sometimes take quite irregular forms, and weigh, when first taken out, from a few ounces to six or seven pounds. The largest portion of this weight, however, consists of water, which soon evaporates, as in the specimen before us. These accretions are composed chiefly of hair, mixed with a little straw or other fibrous material, and are usually built upon some hard substance, as a small piece of wood, a bit of shell, a small stone, and sometimes a piece of iron. In the specimen before us, several small splinters of wood, which the animal failed to digest, evidently became entangled with coarse hair, which formed the nucleus around which the aggregation was built up.

In the process of this aggregation, the hair is matted very firmly and held together by the mucous secretions of the glands of the stomach. They are often built up with a succession of concentric layers, interlaminated with a mixture of calcareous, silicious and other earthy matter. When found, this matter usually covers the outside with a soft, smooth, shell-like coating, of a dark or light brown color, which hardens on exposure to the atmosphere.

They are sometimes found in very young calves. The hair finds its way to the mouth and from thence to the stomach, by being removed from the bodies of the animals in the process of licking themselves and each other. Their formation occupies a long time, generally several years. They sometimes begin to form at a very early age of the animal, and, of course, continue through their after life. They are sometimes so firm and contain such an amount of earthy matter, as to be capable of receiving quite a polish, upon their sectional surface when sawn asunder.

These accretions are not supposed to be especially injurious to the health of the animal except when they occupy the fourth or last stomach, and attain to a considerable size. Under these circumstances, the animal will generally be found ailing and out of condition—if a working animal, unfit for vigorous service. They doubtless produce in the animal a source of oppression and impairment of appetite; but it is not supposed that they produce colic, obstruction, inflammation or strangulation of the intestines.

**MONTE DIABLO COAL.**—Greenhood & Newbauer received from their mine at Mount Diablo, 460 tons of coal in one day during the past week. They have two shafts in their mine—one perpendicular and the other inclined. They are about 700 feet deep. The coal is raised by steam power; it is then conveyed by the railroad to Pittsburg Landing, and shipped by small vessels to this city, carrying from 100 to 200 tons each. In this mine they employ about 225 men.

The gold excitement in the northern counties of Georgia, is said to be on the increase. Sales of mines have been made at high figures.

**CALIFORNIA PRISON COMMISSION.**—The objects of this association are, as stated in its constitution, the "amelioration of the condition of prisoners," the improvement of prisons and prison discipline, and the "aid and encouragement of discharged prisoners, when such encouragement shall seem wise." The first Annual Report has been handed us. It contains a history of the organization, and the reports of its officers for the past year. That of the General Agent is especially worthy of mention. Examples are given in illustration of the duties which the agent has had to perform. Suggestions are made for improvements in the County Jail, which seem to be needed. The want of a "House of Correction" is especially urged; in order that those offenders who are not hardened, but whose one crime is of a certain grade, can be taken care of, without subjecting them to the stigma which popular prejudice attaches to the name of "State Prison Convict." Other suggestions are made, but our space does not permit us to enlarge upon them. No one can read this report without feeling that the institution ought to be encouraged in every way, by every good man.

"EVERY DAY LIFE" is the title of a new San Francisco monthly, which has just presented itself for public favor. It is published by Desty & Wright, under the editorial charge of Mrs. Washington Wright, better known in this community as "Topsy Turvy," or "Carrie Carlton." The initial number, which comprises forty-eight pages, opens with a Christmas story in rhyme, by the editor, and is well filled with interesting original miscellany. A new feature, for a California magazine, is an illustrated Fashion Department. The editor expresses the intention of making the magazine "as nearly 'just the thing that's wanted' as possible." There is room in California for a publication of this description, and we trust the publishers will receive such encouragement as will enable them to make it what such a publication should be.

**PATENT SIDING.**—Our attention has been called to this article, letters patent for which are held by Edward Nunan, master builder, 319 Pine street. It is manufactured from  $\frac{1}{4}$ -inch by 5-inch lumber, by grooving and slitting, the same as common siding. It does not require  $1\frac{1}{2}$ -inch lap, like common siding, but has the lap to every  $4\frac{1}{2}$  inches that rustic siding has to every nine inches, thereby allowing much more than the latter for shrinkage. The advantages claimed for this siding are, first, it is thicker and lies solid to the studding; second, it is superior to inch rustic siding, owing to the liability of the latter to split and shrink from the lap, on account of its great width; third, it is cheaper than common siding, on account of the great saving of laying. This siding is for sale in the different lumber yards in this city.

"THE PACIFIC LAW MAGAZINE," Vol. I. No. 1, has been laid upon our table. It is a pamphlet of about ninety pages, edited by Nathaniel Bennett and John W. Owen, counselors at law, of this city, and will be issued on the first of every month. A portion of the magazine will be devoted to original essays on some subject connected with the law, decisions of the courts of other Pacific States and of the United States, and abstracts of recent decisions of English courts, etc. Another portion will be composed exclusively of decisions of the Supreme Court of this State, with notes. It can be had of H. H. Bancroft & Co.

**THE INTERNATIONAL OCEAN TELEGRAPH COMPANY,** to which Congress at its last session granted the exclusive right for fourteen years to lay a cable from Florida to the West Indies, has obtained a similar grant from Spain, and will soon commence laying a line from Key West to Havana; they will also lay one to Jamaica, and thence to Panama.

**EIGHTEEN HUNDRED AND SIXTY-SIX.**—J. H. Carmany has published in pamphlet form the very complete and elaborate Review of the Year 1866, which appeared in the *Mercantile Gazette* of January 9th. It contains a summary of mining operations on the Pacific coast, and of the financial, commercial, agricultural and manufacturing interests of this State. It will constitute a most convenient and valuable book of reference, and is well worthy of a place upon every desk.

**THE MISSION WOOLEN MILLS COMPANY** had on exhibition on Thursday, at the Mission Dolores, the splendid assortment of goods of their manufacture, which will constitute their contribution to the Paris Exposition. Many of the city notables were present. The show was one which Californians may well be proud of. It has been fully noticed in the daily papers.

**ROBERTSON'S RAILROAD TRACK-LAYING MACHINE.**—It is said that a company has been formed in this city for the purpose of building one of these machines, and bringing it before the public here. We are glad that it is to be done by California capital.

**CONCENTRATORS.**—Messrs. Hineley & Co. of the Fulton Foundry, have received an order from K. S. Woolsey & Co., of Prescott, Arizona, for one of Hendy's Concentrators. One of these machines mentioned in our last issue, was for the "Empire," instead of Hueston mill, Grass Valley.

**ARIZONA.**—An article, giving a descriptive list of all the mills in Northern Arizona, together with much other valuable information, is crowded out of our present issue, but will appear next week.

**THE Commissioner of Agriculture** says that California claims a surplus of breadstuffs sufficient to supply the entire New England population.

**THE French Lieut. Bennis's breech-loader** has been much admired by Louis Napoleon, who has ordered experiments to be made with it.

**BUSY ESTABLISHMENT.**—Palmer, Knox & Co., of the Golden State Iron Works, are at present obliged to run their machine shop until 10 o'clock P. M.

**THE Londoners** are taking up the science of aerial navigation. A society has been organized for the purpose of experimentation on the subject.

**FIVE FIFTEEN-INCH GUNS,** for the fortifications around the bay, were landed, a few days since, from the ship Kingfisher from Boston.

**A GENERATION** has passed away since the first bale of cotton was sent from America to England.

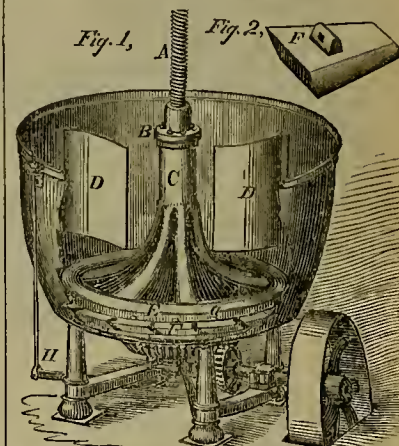
**THE window glass and bottle manufacture** in Pittsburg employs eighteen hundred men and boys.

**TOWNE & BACON, Print—**  
Stock Certificates,  
Assessment Receipt Books,  
Transfer Journals,  
Circulars,  
Hand Bills,  
Cards,  
Billheads,  
And every kind of Job Work that may be desired.  
A NEW ARTICLE OF TAGS FOR GROCERS' USE.  
15v12 536 Clay street, opposite Leidesdorf.

**OIL! OIL!! OIL!!!**  
—OUR—  
**MACHINERY OIL**  
IS SUPERIOR TO ANY IN USE, AND IS WARRANTED NOT TO GUM.  
**Dell, Cranna & Co.,**  
511 1-2 and 513 Front street, San Francisco  
IMPORTERS OF  
**COAL OILS AND LAMP STOCK.**  
2v12-3m5p

**ANOTHER VICTIM.**—James Hanley, a New Granada prospector, died recently at Samanago, on the River Patia. He started two months before he died to prospect another river, in company with the Governor of the State and another. They succeeded in discovering some very rich mines at a point above where it had ever been prospected. But the climate was frightfully malarious, and Mr. H. fell a victim to it.

## STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



### Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the stone, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.  
Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v14d

## A Review of the Year 1866!

Containing an elaborate Resume of the  
**MINING OPERATIONS**  
OF THE ENTIRE PACIFIC COAST,  
Together with a complete Summary of the  
**Financial and Commercial Interests**  
Of this City and State, and other Statistical Information  
pertaining to Agriculture, Manufactures, etc. Also,  
articles on Banks and Local Insurance Companies; Mining Stocks; Treasure Product; Merchandise and  
**Produce Markets;**  
Average Prices of Leading Articles, etc., etc.  
Will be ready for transmission East by the next Steamer.  
**Single Copies, - - - - - 75 Cents.**  
**Ten Copies, and over, - - - - - 50 Cents.**

Compiled from the "Mercantile Gazette and Prices Current" of January 9th, 1867.  
**BY JOHN H. CARMANY,**  
Editor of the San Francisco Weekly Stock Circular.  
3v14-1t

## A. S. Hallidie & Co., MANUFACTURERS OF FLAT & ROUND WIRE ROPE, For Mining, Shipping, Ferry, AND GENERAL PURPOSES.

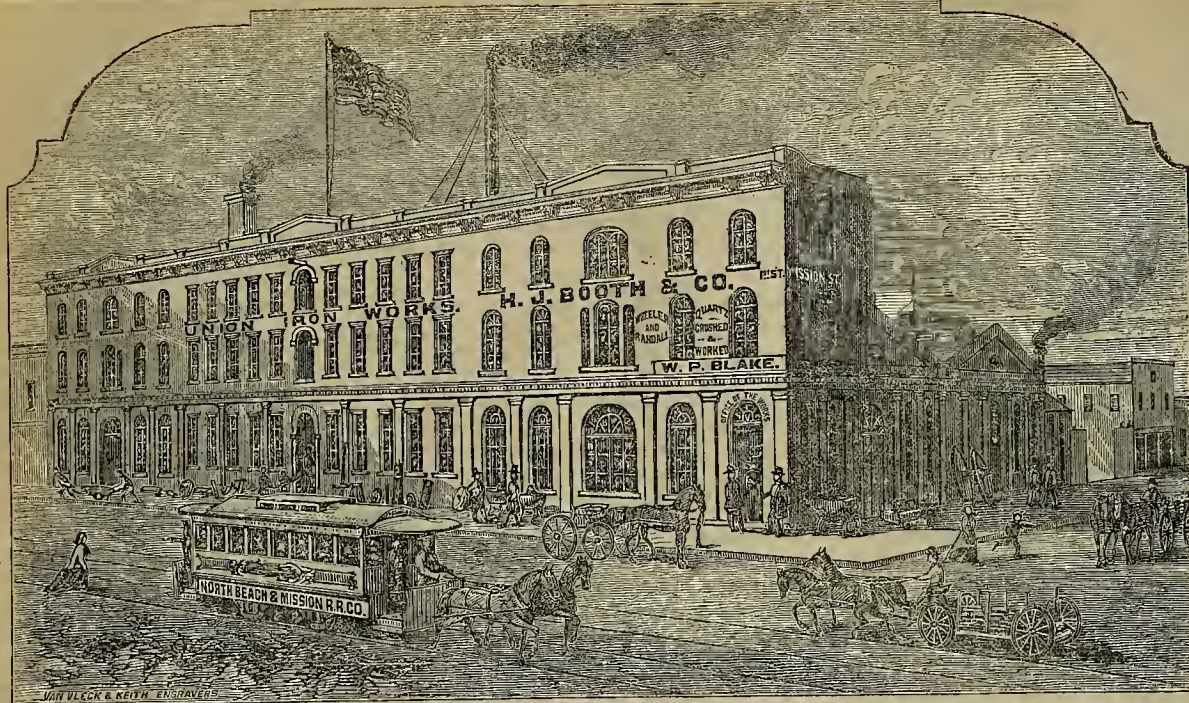
Office—412 Clay street. . . . . Works—North Beach, SAN FRANCISCO.  
**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner.  
The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope, effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.  
Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.  
We manufacture of all sizes, and in any length—  
**Round Wire Rope**—Iron or Steel, for Hoisting.  
**Flat Wire Rope**—  
**Soft Steel Wire Rope**—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saying in freight for remote localities). Suitable sheaves and blocks furnished when required.  
**Galvanized or Ungalvanized Round Wire Rope**—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.  
**Steel Ferry Ropes**—For wide streams. Ferry Blocks supplied.  
**Iron and Copper Wire Cord**— $\frac{1}{2}$  to  $\frac{3}{4}$  inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. 1W7pr cunf. 100 ft.	Cir. 1W7pr cunf. 100 ft.	Cir. 1W7pr cunf. 100 ft.	Size Link. 100 ft.	Brk'g Wt. Str'n. Load.
2 63 1 1/2	33 5	100 3/4	266	7 2,300
2 63 2 1/2	63 10	130 3/4	311	11 3,700
3 1/2 170 2 1/2	91 8	236 3/4	533	19 6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 2v13-6m5p





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps, Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic Hay, Bag, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.** Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, Pac, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's improved Tractory Curve Pan, Zenos Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Porter's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Bectors of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Fans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BOILING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH. GEO. W. PRISCOTT. IRVING M. SCOTT.  
24-12 H. J. BOOTH & CO.

### Machinists and Foundries.

#### PALMER, KNOX & CO., Golden State Iron Works,

Nos. 19, 21, 23, and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

#### MACHINERY,

STEAM ENGINES AND QUARTZ MILLS  
OUNBAR'S IMPROVED

#### Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S  
NEW GRINDER AND AMALGAMATOR  
HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,  
Tyler's Improved Water Wheel.

Giving the greatest power, at lower cost, than any  
Wheel in use. There are over 1,500 running,  
giving universal satisfaction.

KNOX'S AMALGAMATORS,  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.

Genuine White Iron Stamp Shoes and Dies  
Having been engaged for the past eight years in quartz  
mining, and being conversant with all the improvements,  
either in Mining or Milling, we are prepared to furnish, at  
the shortest notice, the most perfect machinery for reduc-  
ing ores, or saving either gold or silver. 13v10ay-1f

#### WILLAMETTE IRON WORKS, PORTLAND, OREGON.

Steam Engines, Boilers,

#### SAW AND GRIST MILLS,

MINING MACHINERY, WROUGHT IRON SHUTTER  
WORK, AND BLACKSMITHING IN GENERAL.

Corner North-Front and E streets,  
13v13-1y One block north of Couch's Wharf.

#### UNION IRON WORKS, Sacramento.

WILLIAMS, ROOT & NELSON,  
MANUFACTURERS OF

STEAM ENGINES, BOILERS,  
And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired  
with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston  
PACKING, for new and old Cylinders, manufactured  
to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

#### JOHN WRIGHT, Pick Manufacturer,

No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for  
Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE  
QUARTZ PICK, which is especially adapted to Quartz Min-  
ing, and guaranteed to give good satisfaction. 19v13-y

#### GEORGE T. PRACY, MACHINE WORKS,

Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

STEAM ENGINE, FLOUR AND SAW MILL  
And Quartz Machinery, Printing Presses,

MACHINERY OF EVERY DESCRIPTION MADE AND  
REPAIRED.

Special attention paid to Repairing. 24-12 qy-3

T. G. DURNING. J. F. FISHER.

#### PACIFIC FILE FACTORY

No. 53 Beale Street,

Between Market and Mission streets, San Francisco.

FILES RECUT AND WARRANTED AS GOOD AS NEW,  
or no charge. The only establishment in the State.  
We also manufacture Reaper and Mower Sections.  
8v13-1y DURNING & FISHER, Props'rs.

LEWIS COFFEY. J. S. RISON.  
LEWIS COFFEY & RISON,  
Steam Boiler & Sheet Iron Works.

THE only exclusively Boiler Making establishment on the  
Pacific Coast owned and conducted by Practical Boiler  
Makers. All orders for New Work and the repairing of Old  
Work, executed as ordered, and warranted as to quality.  
Old Stand, corner of Bush and Market streets, opposite  
Oriental Hotel, San Francisco.

#### GLOBE

#### Foundry and Machine Shop,

STOCKTON, CAL.

#### KEEP, BLAKE & CO.,

MANUFACTURERS OF

Quartz, Saw and Grist Mill Irons, Steam  
Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons,  
House Fronts, Iron Fencing, Balcony Railings, etc.,  
at San Francisco prices. Orders solicited  
and promptly executed. 13v13-1y



#### JAMES MACKEN, COPPERSMITH,

No. 226 Fremont st., bet. Howard & Folsom  
All kinds of COPPER WORK done to order in the best  
manner. Particular attention paid to Steamboat, Sugar  
House and Distillery work.

Repairing promptly and neatly attended to. 13v11

F. N. BACON. LINAS STEWART.  
BACON & STEWART,  
PRACTICAL MACHINISTS,  
No. 51 Beale street, San Francisco.

All kinds of Machinery made and Repaired.  
Particular attention paid to PRINTING PRESS work.  
All jobs entrusted to us will be attended to with prompt-  
ness and on reasonable terms. The patronage of Friends  
is respectfully solicited. 15v13-1y

#### HANSKOM & CO., T. FENDERGAST, H. S. SMITH. W. W. HANSKOM.

#### Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

Practical Machinists and Iron Founders,  
MANUFACTURE

#### STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Re-  
quires no springs or screws; is always steam-tight; without  
excessive friction, and never gets slack or leaky.

#### HANSKOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else  
Wheeler & Randall's New Grinder and  
Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power, at lower cost, than any wheel in use  
Send for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or  
the money will be refunded.

Sole makers for this coast of the "Fendergast  
White Iron Stamp Shoes and Dies.

None genuine unless obtained from us. Every one war-  
ranted. Patented Machinery of all kinds will be furnished by us  
at market prices. Particular attention given to drawings  
and specifications of machinery, which will be made to  
order. The patronage of the public is respectfully solicited.  
15v12

#### FULTON

#### Foundry and Iron Works.

#### HINCKLEY & CO.,

MANUFACTURERS OF

#### STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's  
Improved Crusher, Mining Pumps,  
Amalgamators, and all kinds  
of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mis-  
sion street, San Francisco. 3-4y

#### NEPTUNE IRON WORKS,

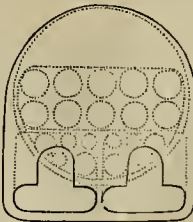
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

#### MARINE

Locomotive,  
And all kinds of  
HIGH PRESSURE  
Steam Boilers

MADE.

All Boilers guaranteed and  
tested by U. S. Boiler In-  
spector before sent out of  
the Shop, at Shop expense.



6v12-1y

All kinds of Sheet Iron and  
Water Pipe, Coal Oil  
Stills, Wrought Iron  
Worms, etc., etc.  
Manufactured to Order.  
Old Boilers Repaired.  
B. CAMERON.

PROSPECTING EXTRAORDINARY.—A New  
York correspondent of the *Erie Dispatch*  
tells the following:

Several years ago, a German Jew, named  
Schwartz, spent three days in searching the  
sewers of New York for valuables. He picked  
up some \$27,000 worth of jewelry, etc., but  
having lost his way during the trip, and re-  
covered it with difficulty, he could not be  
induced to repeat the experiment.

A few days since, a Miss Walker, a young  
lady of eighteen years, who lived with her  
brother, aged sixteen, in a garret, which  
they had occupied since the failure and  
suicide of their father, an unsuccessful gold  
gambler, saw the account of Schwartz's ad-  
venture in an old paper which was wrapped  
around a parcel which she was taking home  
from a sloop-shop. She resolved to under-  
take the same thing. A map of the city was  
first carefully studied. She then, with her  
brother, and a man named Grady, formerly  
in her father's employ, started in for a  
week's journey. The result of their labors  
was valued at one million five hundred  
thousand dollars! One diamond ring was  
alone worth sixteen thousand dollars. Grady  
was lost in the labyrinth, and is supposed to  
have perished.

Tough, ratherishly, we should say!

#### FEVER AND AGUE—EXHALATION OF PLANTS.

The following is confirmatory of the views  
of Dr. J. M. Salisbury, which we have al-  
ready given in a previous issue, and in re-  
gard to which we quoted from the *Journal of*  
*Medical Science* in our paper of Dec. 29th.

"In 1843," says Dr. Hannon, Professor  
of Botany in the University of Brussels, "I  
studied at the University of Liege. Pro-  
fessor Charles Morsen had created in me  
such an amount of enthusiasm in the study  
of the physiology of the fresh water algae,  
that the windows and mantelpiece of my  
chamber were encumbered with plates filled  
with *Vaucheria* *Ascellator* and *conferve*.  
My preceptor said to me: 'Take care at the  
period of their fructification, for the spores  
of the algae give intermittent fever. I have  
had it every time I have studied them too  
closely.' As I cultivated my algae in pure  
water, and not in the water of the marsh  
where I had gathered them, I did not attach  
any importance to his remark. I suffered  
for my carelessness a month later, at the  
period of their fructification. I was taken  
with shivering; my teeth chattered; I had  
the fever, which lasted six weeks."

AGENTS from Cincinnati and other points,  
are traveling through the South for the  
purpose of buying up all the railroad iron  
which was torn up and damaged during the  
WAR.

#### CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal  
Castings, Brass Ship Work of all kinds, Spikes, Shovel  
Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and  
Gongs of superior tone. All kinds of Cocks and Valves, Hy-  
draulic Pumps and Nozzles, and Hose Couplings and Con-  
nections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL. [19v13-1y] J. H. WEED.

#### SAN FRANCISCO

#### Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

Marine and Stationary Engines  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining  
Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

Wine, Cider, Cotton and Tobacco Presses  
of the latest Improved Patterns.

#### STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and  
Oils warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston-  
Packing, requires no springs or screws; is always steam-  
tight; without excessive friction, and never gets slack or  
leaky.

MACHINERY OF ALL DESCRIPTIONS  
Bought, sold, or exchanged. Bolt Cutting and Castings at  
the lowest market rates.

6v11-1y DEVOE, DINSMORE & CO

#### JOHN LOCHHEAD'S

#### Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT  
to order—Marine, Stationary, or Locomotive.

HOISTING AND PUMPING ENGINES,  
PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland  
navigation is called to the

#### Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San  
Francisco for the last forty years, and whose repu-  
tation of having built ONE HUNDRED AND SEVENTEEN  
STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery  
generally, made to order, and warranted to give perfect  
satisfaction in every particular. 25v12-3m



**SILVER PALACES.**—Three magnificent sleeping cars, called "Silver Palaces," have been put upon the New Jersey Central Railroad. The following is the description given by the *Guide*: The wood work throughout is polished black walnut, with ornate silver mountings, each section being divided from its neighbor by a slender pillar of solid German silver. The panels are studded with silver medallions, and the arms of the seats and frames of the mirrors are ornamented with the same material. Mirrors are placed within each section. The interior is lighted not only in the usual manner, but through ground glass panels of delicate design which form the sides of the elevated ceiling. Thus lighted, and the light reflected by the mirrors and the polished silver fittings, the effect is fine. The carpeting and cushioning are of course in keeping with the luxury around them. In each car is a separate stateroom for the accommodation of a party, under special circumstances. This is also handsomely fitted, and offers the comfort of privacy if desirable, or can be thrown open when its inmates prefer being social.

## BELLAMBI COAL!

A SUPERIOR ARTICLE OF  
**SMITH'S' COAL,**

FOR SALE IN QUANTITIES TO SUIT,  
At Greatly Reduced Rates.

Sacked to order for Shipment to the Country.

Apply to  
**FLINT, PEABODY & CO.,**  
1313 1/2 408 CALIFORNIA STREET, San Francisco.

## Bell's Assay Office.

THE UNDERSIGNED, HAVING FORMED A PARTNERSHIP this day, would inform the former patrons and the public generally, that they will continue the ASSAY BUSINESS in all of its branches, at the old stand,

No. 512 California street,

One door west of Montgomery, San Francisco, with the same employees, under the name of Rogers & Brown. MR. EDWARD WOLFE, for the last seven years Assayer for Mr. Bell, will have charge of the Assay Department.

The Melting Department will be under the charge of MR. HENRY J. FISHER, for ten years in the United States Mint in this city and Philadelphia, and for the past seven years with Mr. Bell.

We would inform Photographers that we are prepared to work their chloride of silver and ashes from their paper clippings.

We have, in connection with our Assay business a Mill, and are prepared to  
**WORK GOLD AND SILVER ORES,**  
in quantities from 25 to 500 pounds; also, Assayers' Sweeps.  
**GEORGE E. ROGERS,**  
**H. W. BROWN**  
October 13, 1886. 1913 qllpnr

## QUINCY HALL

## CLOTHING EMPORIUM!

515, 517 and 519 Washington street,  
(Near Montgomery),  
SAN FRANCISCO.

For a Dress Suit,

A Business Suit, or

A Working Suit,  
GO TO QUINCY HALL!

For Shirts, Collars, Drawers, Undershirts, Socks, Ties, Gloves, or any other FURNISHING GOODS,  
GO TO QUINCY HALL!

For Hats, Caps, Trunks, Valises and Carpet Bags,  
JUST GO TO QUINCY HALL!

If you want a SUIT MADE TO ORDER, of Foreign or Domestic Cloth,  
ALWAYS GO TO QUINCY HALL!

IT IS THE LARGEST AND CHEAPEST CLOTHING HOUSE IN SAN FRANCISCO.

All Goods Warranted as Represented

## QUINCY HALL,

Nos. 515, 517 and 519 Washington street,  
1913 3m Next to Montgomery.

Attention! Attention! Attention!

Look to Your Health in Time!

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE** and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism?

Use Healy's Rheumatic Liniment!

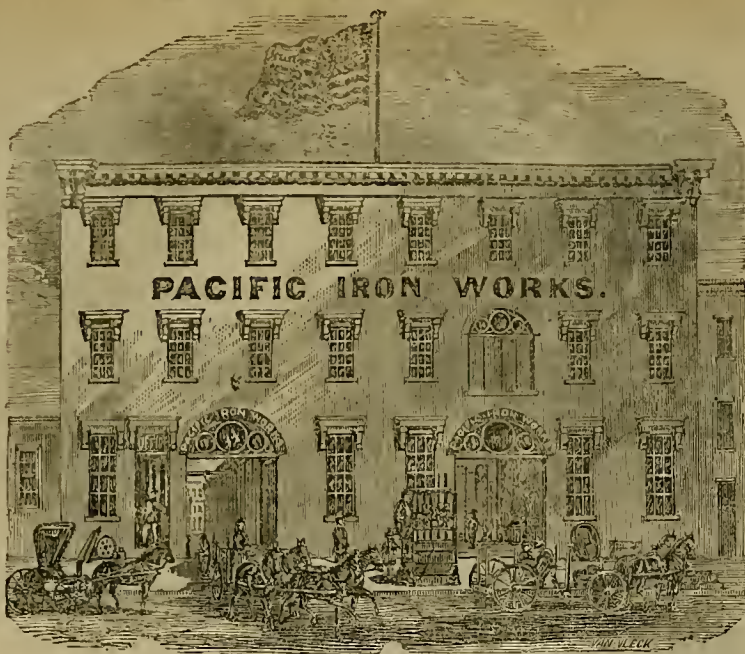
Have you the Headache? Use Healy's Rheumatic Liniment!

Have you a Sore Throat? Use Healy's Rheumatic Liniment!

Have you the Toothache? Use Healy's Rheumatic Liniment!

Are you subject to Cramps? Use Healy's Rheumatic Liniment!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. K. L." is stamped on the cork, and the fac simile of FRANK HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Druggists and Grocers. Price, \$1. 2v14t 10p



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call special attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

**GODDARD & COMPANY.**

## DR. O. DUNNING,

Respectfully informs the public that he treats ALL DISEASES the human system is afflicted with, and can be found at his office,

Rooms Nos. 13 and 14 Government House  
Corner Washington and Sansome streets,  
1913 6m SAN FRANCISCO, CAL.

## NATIONAL

## Insurance Company!

OF SAN FRANCISCO.

Office, No. 408 Montgomery street,  
(Near California).

**MARINE INSURANCE**—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.

**FIRE INSURANCE**—Upon Buildings, Merchandise, Furniture, Rents, Vessels in Port and their Cargoes, and other Insurable Property.

Capital (Paid up) - - - \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

WILLIAM PIERCE, President. D. W. C. THOMPSON, Vice-President.  
W. W. WIGGINS, Secretary. A. NOYES, Marine Officer.

### EXECUTIVE COMMITTEE:

Albert Dillier, Chairman. Joseph A. Donahue,  
R. G. Smith, John G. Bray,  
Abram Block. 22v13 4m

## Pacific Law and Collection Office

—OR—

## W. H. ALLEN,

Attorney and Counsellor at Law,

Principal Office at Rooms 11, 12 and 13 Amory Hall Building.

502 Montgomery Street, San Francisco, Cal.

Agencies at every City and Town on the Pacific Coast. Collections guaranteed with or without suit in all the cities and counties of the Pacific and Atlantic Coasts.

Legal advice will be given free of charge until after 1st January, 1887. Postage on letters asking advice must be paid both ways. 8v13 3m



## RADICAL CURE

—OF—

## RUPTURE!

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process, 624 Washington street, up stairs, Washington Bldg. Building, between Montgomery and Kearny streets.

## DR. A. FOLLEAU

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.

He has no connection with any Agency. 8v13 1y1p

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ASSETS.....\$12,000,000.

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**None but Unexceptional Risks Accepted; and only upon ages between Fourteen and Sixty.**

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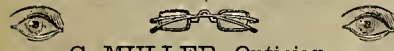
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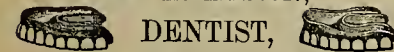


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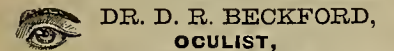
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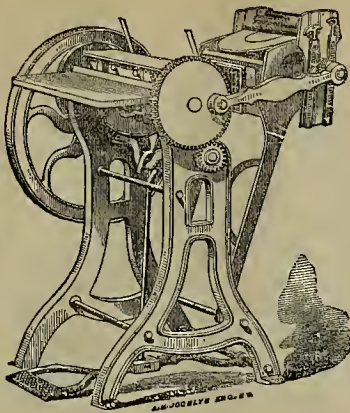
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OWING to its general circulation, the MINING AND SCIENTIFIC PRESS has perhaps been as valuable and useful to the mining interests as that noted paper, the London "Lancet," was to the medical profession, acting either as a scarifier when too great a plethora of mining bubbles prevailed, or as a styptic where dangerous bleeding of the pockets of the capitalists was concerned.—[Copperopolis Courier, Oct. 13]

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## Mining and Scientific Press



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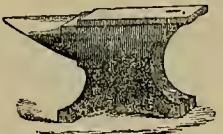
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January 10th—MONTANA.....Capt. Jos. Sutton,  
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Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, at the office of the Company, No. 611 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. W. BUNNELL, Secretary.  
Office, No. 611 Clay street, San Francisco. 14x9

## Big Blue Lead Gold and Silver Mining Company, C.ve District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of January, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable January twenty-sixth, 1867, in United States gold and silver coin, to the Secretary, M. G. Elmore, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twelfth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. 14x9 5w

## Evoca Consolidated Copper Mining Company, Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of January, 1867, an assessment of twenty-five cents (25) per share was levied upon the assessable capital stock of said Company, payable on the eleventh day of February, 1867, in United States gold and silver coin, to the Treasurer, A. E. Thayer, at the office of the Company, at No. 532 Merchant street, Room No. 3, in the City and County of San Francisco, State of California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twentieth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the thirteenth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. S. CLYDE, Secretary.  
Office of the Company, No. 532 Merchant street, Room No. 3, San Francisco, California. 14x9 3

## Hope Gravel Mining Company, Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment (No. 12) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable on the seventh day of February, 1867, in gold coin of the United States, to David Wilder, Secretary, at the office of the Company, No. 529 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Saturday, the twenty-third day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. 14x9 5w

## Josephine Copper Mining Company, Location of Works: Copper District, Calaveras County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-eighth day of November, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J S Cronise.....	174	50	\$50 00
J S Cronise.....	175	50	50 00
J S Cronise.....	176	50	50 00
J S Cronise.....	177	50	50 00
J S Cronise.....	178	50	50 00
J S Cronise.....	179	50	50 00
J S Cronise.....	180	50	50 00
J S Cronise.....	181	50	50 00
J S Cronise.....	182	50	50 00
J S Cronise.....	183	50	50 00
J S Cronise.....	184	50	50 00
J S Cronise.....	185	50	50 00
J S Cronise.....	186	50	50 00
J S Cronise.....	217	50	50 00
J S Cronise.....	218	50	50 00
J S Cronise.....	219	50	50 00
J S Cronise.....	220	50	50 00
J S Cronise.....	221	50	50 00
J S Cronise.....	222	50	50 00
J S Cronise.....	223	50	50 00
J S Cronise.....	224	50	50 00
J S Cronise.....	225	50	50 00
J S Cronise.....	226	50	50 00
J S Cronise.....	227	50	50 00
J S Cronise.....	228	50	50 00
J S Cronise.....	229	45	45 00
W H V Cronise.....	231	1	1 00
James Freeborn.....	234	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-eighth day of November, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Olney & Co., No. 418 Montgomery street, San Francisco, Cal., on the fourth day of February, 1867, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

E. C. McCOMB, Secretary.  
Office, No. 1 Government House, corner Sansome and Washington streets. 14x9

## Mining Notices--Continued.

## Cosula Silver Mining Company, Cosula District, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of December, 1866, an assessment of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to Chas. Baum, Secretary, at the office of this Company, 510 Battery street, opposite the Custom House, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, Cal. 14x22

## Dios Padre Gold and Silver Mining Company, Alamos, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of December, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
William Bihler.....	299	20	\$50 00
William Bihler.....	308	5	15 00
William Bihler.....	411	25	75 00
William Bihler.....	389	25	75 00
A C Feasby.....	371	145	435 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of December, 1866, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., 418 Montgomery street, San Francisco, Cal., on the twenty-ninth day of January, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

E. C. McCOMB, Secretary.  
Office, No. 1 Government House, corner Sansome and Washington streets, San Francisco, Cal. 14x9 5

## George Washington Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 16.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirty-first day of December, 1866, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the company, only.

Any stock upon which said assessment shall remain unpaid on the eighth day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. 14x9 5

## Great Central Mining Company.—Location of Works: Yuma County, Arizona Territory.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of December, 1866, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary and Treasurer, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-sixth day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the fourteenth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.  
Office, No. 302 Montgomery street. 14x29

## Hanscom Copper Mining Company, Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of December, 1866, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at 609 Market street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. S. SWEET, Secretary.  
Office, No. 609 Market street, San Francisco, Cal. 14x29

## Julia Gold and Silver Mining Company, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of January, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, 607 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the third day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. NOEL, Secretary.  
Office, 607 Washington street, San Francisco, Cal. 14x2

## Keystone Mining Company, Location of Works: Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of November, 1866, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, his office, No. 440 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Monday, the twenty-first day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. 14x24

## Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.

Notice.—There are delinquent, upon the following described stock on account of assessment levied on the fourth day of December, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Booth, Lucius A.....	14	75	\$68 00
Falkner, Bell & Co.....	14	75	150 00
Gordon, John.....	15	75	74 00
Gillespie, Henry.....	19	37	52 00
Harris, George.....	20	20	20 00
Isbell, Thomas J.....	22	12	24 00
Jones, Cyrus W.....	25	180	360 00
Kruttiger, G. B.....	25	10	40 00
Leavitt, John.....	26	220	552 00
Macpherson, A. W.....	26	289	598 00
Peck, David.....	49	180	360 00
Russell, George.....	51	20	20 00
Schmadel, Eliza.....	53	22	44 00
Vandervoort, J. C.....	28	50	100 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of December, 1866, so many shares of each parcel of said stock as may be necessary will be sold at the auction rooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on Tuesday, the twenty-second day of January, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. 14x5

## North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.

Notice is hereby given, that at a regular monthly meeting of the Board of Trustees of said Company, held on the eleventh day of January, 1867, an assessment of twelve dollars and fifty cents (\$25.50) per share was levied upon the capital stock of said Company, payable January twenty-first, 1867, in United States gold coin, to the Secretary, at the office of the Association, No. 418 California street, Room No. 5, third floor, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twelfth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

OEO. W. KINNEY, Secretary.  
Office, No. 418 California street, Room No. 5, third floor. 14x12

## STOCK CERTIFICATES,

## STOCK TRANSFER JOURNALS,

## STOCK LEDGERS,

## ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of THE MINING AND SCIENTIFIC PRESS.

## Nonpareil Gold Mining Company, Location of Works: Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-sixth day of December, 1866, an assessment of one dollar and fifty (\$1.50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 423 Washington street, Room 5, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of January, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighteenth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. A. ELDRIDGE, Secretary.  
Office, 423 Washington street, San Francisco. 14x29

## Oxford Beta Tunnel and Minlog Company, Esmeralda District and County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of January, 1867, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or to the Superintendent at the mine.

Any stock upon which said assessment shall remain unpaid on the fourth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. H. PECK, Secretary.  
Office, corner Broadway and Sansome streets, San Francisco. 14x12

## NOTICE.

The following resolution was passed at the meeting of the Board of Trustees of the Ophir Silver Mining Company, held this day:

Resolved, That the resolution of this Board, passed at the meeting held December twenty-fourth, 1866, providing for the paying of an assessment of five dollars per share on the capital stock of this Company, (on account of informality,) be and the same hereby is rescinded.

ROBERT GEORGE, Secretary.  
Office Ophir Silver Mining Company, San Francisco, January 10th, 1867.

## Assessment Notice.

## Ophir Silver Mining Company—Location of Works, Virginia District, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on this tenth (10th) day of January, 1867, an assessment of five (\$5) dollars per share was levied upon each and every share of the capital stock of this Company, payable in United States gold coin, on the fourteenth instant, to the Secretary of this Company, at the office of the Company, Nos. 4 and 5 Court Block, corner of Montgomery and Jackson streets, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold at public auction on the first day of March, 1867, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

Office Ophir Silver Mining Company, Nos. 4 and 5 Court Block, corner of Montgomery and Jackson streets, San Francisco, California.

ROBERT GEORGE, Secretary. 14x5

January 10th, 1867.

## Rattlesnake Gold and Silver Mining Company, Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of January, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 318 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold at public auction on the first day of March, 1867, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, Up-stairs, San Francisco. 14x2

## Santa Cruz Petroleum Oil Works Company.—Location: Santa Cruz County, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 18) levied on the fourth day of December, 1866, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Jones, Martha L.....	631	50	\$25 00
Reed, H. R.....	720	25	12 50
W. H. Heston.....	722	100	60 00
Winslow, E. J.....	764	300	150 00
Zimmerman, J. A.....	759	20	10 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of December, 1866, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Cobb & Slaton, 404 California street, San Francisco, Cal., on Tuesday, the twenty-ninth day of January, 1867, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. WEGENER, Secretary.  
Office, 415 Montgomery street, San Francisco, Cal. 14x2

## Siskiyou Mining Company—Location of Works: Middle Fork of Humboldt Creek, in the County of Siskiyou, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of December, 1866, an assessment of five (\$5) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, Room 22 Court Block, No. 655 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of January, 1867, shall be



## Machinery.

## V. CUSHING, Agent

—FOR THE—

Purchase & Shipping of Machinery  
OF ALL KINDS.

Especially attention given to **Quartz Mill Machinery and Findings, and Miners' Material** of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to—

Governor F. F. Low; Coffey & Risdon, San Francisco; C. T. Meader, Stockton; Geo. E. Gluyas, Chief Engineer of Cal. S. Nav. Co., San Francisco; J. W. Stowe, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco.

4v12

HUNTER'S  
IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphurets ore will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the UNION FOUNDRY, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setters for themselves, at the  
PACIFIC FOUNDRY,  
1v1 San Francisco.

BRUCKNER'S  
Mechanical Roasting Furnace

AWARDED A

PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market street, San Francisco.

Notice to Miners,  
Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing work.

M. PRAG,

Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. F. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS

For Steam Engines.

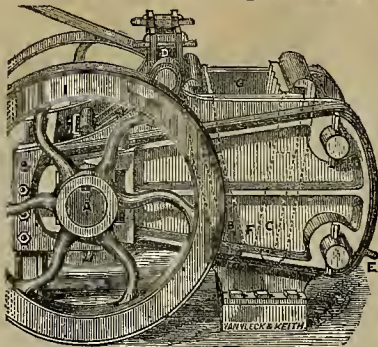
Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,

Beale Street, San Francisco,  
2v12 3m

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1—Or 14-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—Price, \$600  
No. 2—Or 15-inch Crusher, capable of similarly putting through live to six tons per hour..... \$850  
No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour..... 1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Raywhite Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

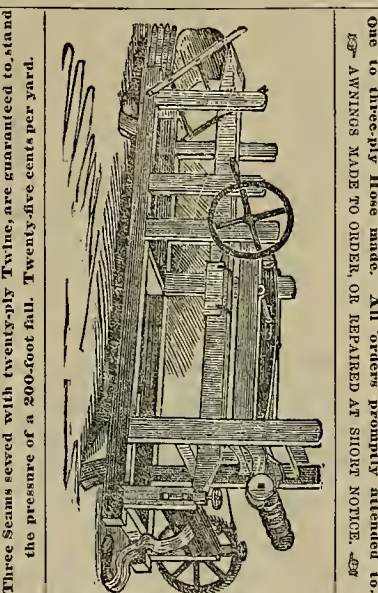
The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Raywhite Ranch" Mine, in Tuolumne County: "Raywhite Ranch, Tuolumne Co., Sept. 28, 1866. JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Raywhite Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, Supt. Raywhite Ranch Quartz Mill."

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel. A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers. The following testimonial respecting the effectiveness of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866. BRODIE & KADOLFF, Express Building, 402 Montgomery street, San Francisco.

12v13f

PATENT HYDRAULIC HOSE SEWING  
By S. HOWARD,

Three seams sewed with twenty-ply Twine, are guaranteed to stand the pressure of a 200-foot fall. Twelve, five cents per yard.

One to three-ply Hose made. All orders promptly attended to. ADVANCES MADE TO ORDER, OR REPAIRED AT SHORT NOTICE. —

No. 326 DAVIS STREET, San Francisco.

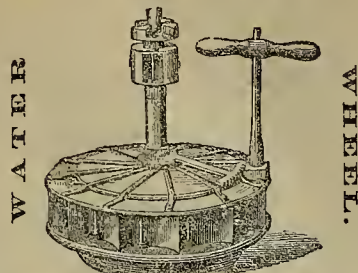
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## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission. Ores, in lots not exceeding 2,000 pounds, tested by  
2v13 G. W. STRONO, Assayer.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery; Saw Mills, Flour Mills, Quartz Mills, etc., etc. CALIFORNIA REFERENCES.—E. Stockton, Polson; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular, to KNAPP & GRANT, Agents for California, 26v13-1yq 310 Washington street, San Francisco

## Hunt's California Pump

HAS all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired. These Pumps have given good satisfaction to all who have used them during the last three years. Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 28 Second Street and 110 Jessie Street.

## PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3—3-inch cylinder, 6-inch stroke.....\$30 00  
No. 4—3 1/2-inch cylinder, 6-inch stroke..... 35 00  
No. 5—4-inch cylinder, 6-inch stroke..... 45 00  
No. 6—5-inch cylinder, 8-inch stroke..... 60 00  
No. 8—8-inch cylinder, 12-inch stroke..... 90 00  
For a liberal discount made to the trade.  
For further particulars, send for Circular.

E. O. HUNT,  
21v13f 28 Second and 110 Jessie streets, San Francisco.

GLASGOW  
IRON AND METAL IMPORTING CO.,

No. 27 Fremont street,  
SAN FRANCISCO.

Beg to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined **Bars, Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes, GAS FIXTURES, etc.** They offer the same for cash, on liberal terms at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market. Country Orders punctually attended to. 19v13-q

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ore, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

1v14-3m JAMES HITCHENS.

## FOR SALE!

## QUARTZ AND MINING MACHINERY

ONE GARDNER'S THUNDERBOLT CRUSHER, LARGEST size and best quality; is entirely new, with all extras—with a large lot of other Quartz Machinery, including Engines, Boilers, etc. 16v13 COFFEY & RISDO

## Job Printing Press for Sale—\$250.

A Largest Size (half medium) RUGGLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to NEWBY & CO., Mining and Scientific Press Office.

Economy in Advertising.—THE MINING AND SCIENTIFIC PRESS is the best and most economical mining advertising medium in this city. Our terms are less than one half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

## Earthquake in Klamath.

A letter from the Quartermaster's clerk at Fort Klamath, written by order of the commander of the post, dated January 8th, contains the following:

This morning, at daylight, we were startled from sleep by a precipitate shock of an earthquake, immediately followed by a noise as of distant thunder; but in a little while quiet reigned, and every one was conversing and laughing heartily at the singular phenomenon. But our countenances soon underwent a serious change; for it began to grow dark, and the whole heavens were full of a very black smoke or cloud; the air had a sulphurous smell, and ashes of a brownish color fell as fast as I ever saw it snow. We had to use caudles in the mess room. The most of us went into breakfast, but had only got fairly into our seats, when horror upon horror, the earth seemed rolling like waves upon the ocean; every one was thrown to the floor, only regaining their feet to be placed in the same position, with the rattling of dishes, crashing of glasses, cracking of timbers of buildings, and the screams of the frightened boys—you could not imagine a more perfect chaos. Some of us gained the door, and such a sight met our gaze. The tall pines around the Fort seemed lashing themselves into fury; the wagons in front of the stable were engaged in a pitched battle; horses and cattle were lying crumpled upon the ground and uttering the most pitiful moans; dogs were howling, and the unearthly yells of the Klamath Indians, camped near the Fort, completed the whole affair. We imagined we were amidst the wreck of matter and the crash of worlds. The sutler's store was thrown about twenty feet from its former position. There were no lives lost, and no serious accidents to any one. Quite a number retain bruised shins and skinned noses; no very serious damage was done to any of the buildings, all being log and frame houses, but I do not think there is a whole pane of glass left at the post. A continuous dark volume of smoke is seen ascending in the direction of Klamath marsh. There was about half an hour between the first and second shocks, the first being barely perceptible. The second lasted as near as can be judged, from various opinions, from two to three minutes.

A postscript adds: Mr. Whitmore has just arrived at the Agency and reports that the lake has lowered about six feet, and is still falling. Crooked Creek, a stream between this place and the Agency, has dried completely.

Although the country in that region shows traces of extinct craters, there is no tradition that any of them have been active during the historical period. But Mount Hood, 275 miles north, has been smoking more or less for the past two months. Mount St. Helena, and Mount Baker, have for some time shown similar signs at intervals. A smart shock of an earthquake was felt about a month ago at the Dalles.

AMERICAN ARMS IN EUROPE.—A Paris correspondent says a formidable American rival to the terrible needle gun of Sadowa seems to have already presented itself. Lieutenant Lamson, of the United States army, has had a lengthened interview, by special appointment, with the Emperor, to exhibit and explain to him the breech-loading magazine gun, of Mr. Ball, of Vermont. The result of the interview and the examination of the weapon, were in every way satisfactory and flattering to the American inventors, and that there can be little doubt that the French army will soon have this new production of American military genius placed in its hands. For three months and a half the Swiss Government has had a committee of experienced gunsmiths and army officers at Acrod, engaged in experimenting on the different systems of improved modern muskets, and that committee has just recommended to the Government to introduce the American Winchester rifle into the whole army. This is simply the Henry rifle, somewhat modified by Mr. Chapin. For a long time the Prussian needle-gun was in favor, but the Winchester, coming in last of all, carried off the palm among no less than 150 models offered.

THE survey for the Western Pacific Railroad route, between Stockton and Sacramento, is completed, with the exception of nine miles.

IN NEVADA COUNTY only one hundred feet on a quartz lode is allowed to a locator; such was the miners' law adopted in 1852, which has never been changed.



**ARTILLERY EXPERIMENTS.**—A Fortress Monroe letter of the 14th December has the following:

The experiments under the direction of Col. T. G. Baylor, commanding Fortress Monroe Arsenal, to test the endurance of 8-inch and 12-inch rifled Rodman guns, pursuant to the recommendations of Secretary Stanton, have been commenced here with determined energy to apply the proposed test most thoroughly, and to accomplish decisive results for the future guidance of the Government in the use of heavy ordnance. Thus far the firing has been with the 12-inch rifled gun, originally known as the Floyd gun, after that called the Lincoln gun and afterwards the Union gun, which name it goes by at present. This gun was cast in Pittsburgh, Pennsylvania, and, as is well known by the thousands who have seen it, is a monster in size, weighing over twenty-six tons. The charges weigh fifty-five pounds each, and the projectiles used, known as the tiger projectile, weigh about six hundred pounds each. Up to the present time this gun has been fired about four hundred times, and it appears as strong as ever. It is proposed to continue the firing to \$1,000 times, unless it should explode or become unserviceable before the number of shots have been fired. In the 8-inch gun the charge weighs fifteen pounds and the projectile about one hundred and fifty pounds. The gun of this caliber to be tested has been here several months and has already been fired some three hundred and fifty times. It is proposed also to fire this one thousand times if the gun proves equal to the test. The experiment will last several weeks. These proposed tests are connected with the late iron clad target practice, and comprise part of a series of most interesting and valuable artillery experiments which the Government has wisely inaugurated on the very judicious defensive maxim, "in time of peace prepare for war."

**GOLD PROSPECTORS IN SOUTH AMERICA.**—A party of Oregonians has been organized to go on a prospecting tour to Ecuador, South America. The names of the prospectors are M. M. McKean, Geo. McKean, S. Marcy and H. Warren. A number of the citizens of Grant county are interested in the enterprise. The party are all experienced miners. Mr. Marcy was in the region they design exploring last year, and found some rich specimens, which he brought with him.

The inventor of the needle-gun has now made a needle cannon. A six-pounder is said to have made good shooting at 2,000 paces.

#### MELLVILLE C. KEITH, M. D.

**Homeopathic Physician,**  
No. 655 Howard Street, between Second and Third,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
1813 6amr

#### Mammoth Quartz Lode, Keysville District, Kern County.

"To all whom it may Concern."  
ALL PARTIES negotiating for interests in the above Lode, would do well to examine titles before investing, as the legal title to a considerable portion thereof is vested in the undersigned.

WILLIAM MARSH,  
W. L. KENNEDY.  
Keysville, Kern County, Oct. 1, 1886. 16v13m3m

#### WE ARE NOW OFFERING OUR IMMENSE STOCK OF Fine Custom Made Clothing

Gents' Furnishing Goods  
AT PRICES THAT DEFTY COMPETITION.  
Our Stock of Clothing Consists of  
ALL THE LATEST STYLES  
BOTH OF MATERIAL AND FINISH.

A Large Assortment of  
Trunks, Valises, Carpet Bags, Blankets, Etc.,  
AT EXTREMELY LOW PRICES.

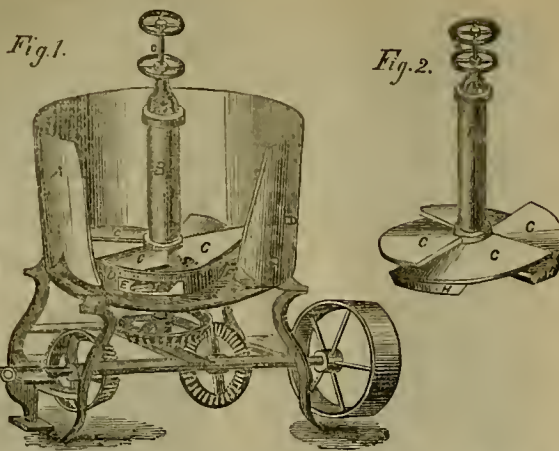
J. R. MEAD & CO.,  
8v10 Cor. of Washington and Sansome streets.

#### Our Patent Agency.

The PATENT AGENCY OF THE MINING AND SCIENTIFIC PRESS has been signalized with remarkable success during the past two years. The importance to the inventive genius of this coast of a thorough and reliable agency for the solicitation of LETTERS PATENT from the United States and foreign Governments cannot be over-rated, and the Proprietors of the Press, feeling the responsibility which rests upon them, and the reward which must follow the faithful performance of their trusts, will take care to afford inventors every advantage to be secured to them through a competent and responsible agency upon this coast.

#### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is effectually rubbed by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

#### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

#### Illuminating, Lubricating, PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPEAM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

#### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.

A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

#### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 13-3m19 414 Front street, San Francisco.

#### NITRO GLYCERINE.

#### Nobel's Patent Blasting Oil!

WE ARE NOW PREPARED TO SELL NOBEL'S PATENT Nitro Glycerine. The same is stored with Mr. C. S. SWENSON, at Michigan Bluff, Placer county, from where the Oil has to be received by purchasers. Application to be made to Mr. C. S. Swenson, or to the undersigned.

#### IGNITERS AND CARTRIDGES!

For sale at the same place. 13-3m19

Mr. Swenson is willing, if desired, to show purchasers the mode of blasting, either at his own mine, Michigan Bluff, or at the places of purchasers. Pamphlets, with minute instructions, will be presented to every purchaser or applicant.

BANDMANN, NIELSON & CO.,  
21v13 210 Front street, San Francisco.

#### IMPORTANT

#### WORKERS OF GOLD & SILVER ORES.

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on MR. WILLIAM SLOSSON, at Prof. W. P. Blake's Office, and obtain a Business Circular, just published by the WURTZ AMALGAMATION COMPANY of New York, who have secured, under the Patents of Prof. Henry Wurtz, the sole and exclusive right to the use of sodium in amalgamation. Mr. Slosson is prepared to supply the leucous of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Barnard, of Columbia College, "two grains of gold may be gathered where but one was before." 18v13-2m



#### STANDARD SOAP COMPANY'S WASHING POWDER.

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material and contains nothing that will injure the finest fabric. Equally as good for using in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lbs each. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12qr

We receive, regularly as clock work, this exceedingly valuable and interesting journal. [Napa Reporter.]

#### JOHN TAYLOR & CO.

IMPORTERS,

AND DEALERS IN

**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

#### ASSAY AND BULLION BALANCES,

And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' Sundries, Acids and Chemicals, constantly on hand. San Francisco March 6, 1885. 11v10-4f

#### WOODWARD'S GARDENS!

#### MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

#### Open Every Day!

#### ADMISSION:

To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments. These Gardens are accessible by the Howard, Folsom and Market street Cars. Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

#### Baldness! Baldness!!

CAN BE PREVENTED, BY USING

#### Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by  
W. E. MAYHEW, Druggist,  
N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions. Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 15v13-6w

#### Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS of the Nervous System and Reproductive Organs, to be had by addressing and inclosing twenty-five cents, postage stamps, to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

#### HALL'S SARSAPARILLA,

YELLOW DOCK AND IODIDE OF POTASS.

#### THE BEST BLOOD PURIFIER KNOWN.

Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Boils, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Arsenic nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."

SHEPARDSON & GATES, Prop's,  
N. W. cor. Sansome and Commercial sts.

22v13-3m

#### TRUSSES! TRUSSES!!

#### Abdominal Supporters!

#### Shoulder Braces, Etc., Etc.

WE WOULD CALL THE ATTENTION OF DEALERS and others to our complete assortment of these goods, including BURLITT & BUTMAN'S Celebrated BALL AND SOCKET REVERSIBLE TRUSS, which is decidedly the best article ever introduced into this market. By a combination of the movement of the ball and socket, and the movable arm, any desired angle may be obtained. Call and examine for yourselves. A liberal discount to the trade. SHEPARDSON & GATES, Agents.  
22v13-3m Corner Sansome and Commercial streets.

#### Rheumatism!!

#### Still Another Witness!

LATHROP, Cal., Sept. 19, 1885. }  
(White Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than at times a slight and temporary relief. About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably puts it to flight. I therefore cordially recommend it to the afflicted as an untailing remedy for Rheumatism. FRED'K. FABER.

Richard's Remedy is for sale by  
H. BOWMAN, Druggist, Sacramento.  
And by Druggists generally.

#### The Mercantile Gazette

—AND—

#### PRICES CURRENT,

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STEAMER DAY.

13v13tf

#### REPORT

—OF THE—

#### COMMITTEE

—ON—

#### SEWING MACHINES!

#### California State Fair, 1886:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

#### FOR GENERAL FAMILY USE

—THE—

#### "FLORENCE"

—IS—

#### "THE BEST."

(Signed) J. N. ANDREWS,  
THOMAS C. MCHALE,  
L. ELKUS.

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

SAMUEL HILL,

General Agent, 111 Montgomery street, San Francisco.

17v13



**PHOTOGRAPHY APPLIED TO SCULPTURE.**  
We have already alluded to this new application of the photographic art, and will now give a brief description of the process: The operating room has twenty-five sides, all of glass, in the middle of each of which is a camera. These twenty-four cameras are so arranged that all can be closed and opened simultaneously. In the center of the room is a platform for the sitter. The picture is taken in the ordinary way, and the operator is in possession of twenty-four negatives, which are a complete series from the full face round to the full face again. The mass of clay to be molded is divided by vertical lines into twenty-four sections. Each of the negatives, after having been reproduced of a magnified size, is set up before the section answering to it. The pantograph is then brought into use. This is simply a rod, with one end pointed and the other furnished with a scraper. This rod is suspended in a frame. It is precisely like the rods used thirty years ago to take "profiles," except that it has the scraper instead of the pencil. It is easy to see, without further description, how the scraper is made to shape each of the twenty-four sections on the clay mass in turn. The artist then puts on the finishing touches with his chisel.

**NEW PROCESS FOR DESULPHURIZATION.**  
The Nevada Transcript of January 11th has the following:

W. R. Oliver, of Forest Hill, is in this city, introducing a process for desulphurization, for which he claims almost magic powers. He says he can work a ton of the most refractory sulphurets in from one and a half to two hours, extracting in that time all the precious metals. His process has been used in several of the cement mills in Little York township. He has sold 453 receipts, and claims that he can satisfy any man of the efficacy of this method. If it does what he claims for it, it should be possessed by every man in the State.

We should be glad to hear from some of Mr. Oliver's purchasers in regard to the result of their experiments with his receipt. It has occasionally happened, we believe, that the buyers of receipts have finally discovered that there were two sales made when the bargain was consummated. We trust this is not the case in this instance.

**WHALING** is carried on to some extent in the vicinity of San Pedro. The whales are easily captured when they approach the shore and become entangled in the kelp. So says the Wilmington Journal.

The various petroleum stills in this city have a joint capacity of about 100,000 gallons monthly.

**PACIFIC POWDER MILL  
COMPANY'S  
BLASTING POWDER!  
MANUFACTURED  
IN MARIN COUNTY,  
CALIFORNIA.  
FOR SALE BY  
HAYWARD, COLEMAN & CO.,  
AGENTS,  
414 Front Street, San Francisco,  
3v14-1m**

## Pacific Chemical Works.

**FALKENAU & HANKS,**  
Desire to call the attention of Druggists, Manufacturers, Metallurgists, Millmen, Assayers, Chemists and Students, to their  
**ANALYTICAL LABORATORY,**  
And Establishment for the manufacture of Pure Re-agents, Pharmaceutical Preparations, And all CHEMICALS used in the Arts. They are prepared to make Chemical investigations,  
**Analyses and Assays,**  
Of every description, and to give advice upon all matters pertaining to Technical Chemistry.  
Office, 629 Washington street; Laboratory, Corner of 3v14-1f Center and Folsom streets.



## Boiler Makers and Sheet Iron Workers.

Mission Street, between Beale and Fremont, San Francisco.  
N. B.—All kinds of Boiler and Sheet Iron Work executed at the shortest notice, and on the most reasonable terms.  
17v12eoptif  
**MOYNIHAN & AITKEN.**

## TO MINERS, MILLWRIGHTS AND FARMERS.

We beg leave to call your especial attention to the

### EXCELSIOR

**Double-Acting Suction and Force Pump.**  
Hooker's Patent, Aug. 15, 1865.

This Double-Acting Suction and Force Pump, the best in use, is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and is warranted to furnish more water, than any other Pump of equal caliber. It has Puppet Valves, faced with vulcanized rubber, which cannot be wrongly placed in the Pump. The valves can be changed without disconnecting air-chamber, suction or discharge pipes.

In case of necessity, the Pump can be run at any high rate of speed, and will furnish water proportionately. The Excelsior Pump is equally adapted to use for surface and deep wells or shafts. It can be run by windmill or horse power for irrigating purposes; also by hand or steam power on steamers and ships. For domestic use, no better Pump can be found.

Fig. 3.

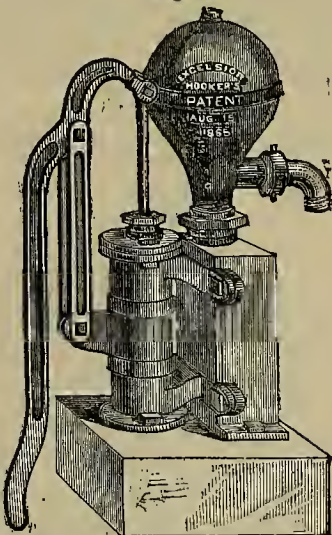


Fig. 3 represents a Hand Pump, which works very easy, and with even power. Fig. 4 is a 6-inch Mining Pump, showing adjustable bonnet of the valve chest.

For Circulars, or further particulars, inquire of or address J. W. BRITTAN & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or  
1am  
**CUSHING & CO., Prop'rs, San Francisco.**

### Consumption Cured.

Fulton, Hamilton Co., Ohio, May 19, 1863.—Gents: This is to certify that my daughter was taken with a severe cold, which settled upon her lungs, attended with violent coughing. The cough became incessant and distressing, with pain and great difficulty of breathing. It went on until chills and night sweats set in, when she raised large quantities of phlegm and matter. The attending physicians examined her, and said that they thought one of her lungs was almost gone, and that they believed she could not be cured, as she had the last stages of consumption. At this time she was induced to try ALLEN'S LUNG BALM, having heard of its many remarkable cures. On using the Balm, it seemed to go to the very seat of the disease at once, as it caused her to expectorate large quantities of phlegm. The cough began to mend; the soreness of the lungs was relieved; the strength and appetite returned. By the use of only three bottles, she, to all appearances, had recovered her health, and now feels as well as ever.  
Respectfully yours,  
LUCIUS PECK.  
Sold by all Medicine Dealers every where. 1v14-1m

A splendid paper, and should have a good list of subscribers in prosperous Grass Valley.—[G. V. National.

**Important to Californians.**—Many inventors have lately had their claims for Patents seriously (and in some cases fatally) delayed by the unqualification of agents who have not complied with the Government license and revenue laws, as well as other new and imperative regulations. These discrepancies, although arising from the inexperience of honest agents, are none the less dangerous to applicants for patents, whose safest course is to trust their business with none but active and experienced solicitors. THE MINING AND SCIENTIFIC PRESS PATENT AGENCY has strictly complied with the requirements of the Department, and properly filed all necessary papers as Claim Agents.

**CHANGING THE ADDRESS.**—No charge is made for changing the address of this paper. To give all necessary information, write us plainly as follows: "Change address of the Mining and Scientific Press from Mr. .... at .... P. O., .... County, .... State, to Mr. .... at .... P. O., .... County, .... State, .... 186-." 1am1s

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Cor. Mission and Fremont sts., SAN FRANCISCO.

Manufacturer of Brass, Zinc, and Anti-Friction or

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CHURCH AND STEAMBOAT

BELLS,

TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZLES

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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PUBLISHER, IMPORTER AND DEALER IN

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Charts, Guide-Books, Globes,

Books, Stationery, and Fancy Articles,

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mento, San Francisco.

Agents and Dealers supplied on Liberal Terms.

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And all articles used by Engineers. Cholttenham Fire Clay

Works, St. Louis;

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Turnbull & Gummessell's Hearse.

103 California street, corner of Davis street.

18v13-3m16p SAN FRANCISCO.

## Foundry for Sale.

A One-half Interest in the  
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SACRAMENTO,

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SAN FRANCISCO, SATURDAY, JANUARY 26, 1867.

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California Academy of Natural Sciences.

## REGULAR MEETING.

SAN FRANCISCO, Jan. 21, 1867.

President in the Chair. Twenty-three members present.

Governor R. C. McCormick of Arizona, and R. C. Jacobs of Chihuahua, were elected corresponding members; and Messrs. J. W. Kidwell, A. S. S. Mason, H. C. Bidwell and H. P. Carlton, were elected resident members.

Messrs. C. Von Liebenau, L. Gilson, Delos J. Howe, R. S. Williamson, R. d'Hereuse, Rev. J. F. Harrington, H. C. Hyde, G. B. Hitchcock, Jacob Bacon, J. P. LeComut, Amory F. Bell, W. C. Walker, Dr. Geo. H. Powers, and Dr. Thos. Bennett, were proposed for resident membership.

**Donations to Library.**—A large number of publications, principally proceedings of European Scientific Societies, received through the Smithsonian Institute.

Dr. A. Kellogg read a communication concerning the identification of certain specimens of a plant exhibited by him. This plant was held in esteem as a cure for chronic rheumatism, and might be mistaken for the *Sanicula* (*Sanicula*), or the Sweet Cicely (*os-moerhiza*), also quite harmless, or perhaps even for the deadly poison hemlock (*conium maculatum*), which grows abundantly in similar localities, as will be seen by Doctor Cooper's Report. This public notice of a plant not new, is the more important, because at least one case of poisoning has occurred, and if a careless or ignorant collector has sent hither other plants mistaken for the true one, serious mischief might result; the specimens examined are the *Thapsium Coradatum*, or the common heartleaf meadow parsnip.

Dr. Kellogg also presented specimens of a beautiful Alpine willow herb, collected by Mr. Blanchard, of Brooklyn, Alameda county, in the Kearsarge Mountains, Owen's River country, at an altitude of 8,000 feet. He considered it a variety of *Epilobium Obcordatum*, Gray; Pro. Am. Acad. Arts and Sciences for May, 1865.

Dr. James Blake read a highly interesting paper, concerning the singular manner in which the embryo of the Embryotoioid fishes receives the nourishment necessary to its growth.

Mr. Bolander exhibited the cones of many species of pines peculiar to this State, and gave many interesting facts concerning the peculiarities of the different species, and their geographical distribution. He stated that the pines of California comprise sixteen true species, which he described briefly. There are twenty synonyms for these species, which have created some confusion as to their real name and number. The correct names of all, with the popular characteristics of the most striking, and their

distribution, we give herewith. The names marked thus \* are those of trees having persistent cones, which they retain from ten to twenty years in some instances. Those marked thus † retain their cones but two years. Those marked thus ‡ throw a series of cones every year.

*Pinus Insignis*. \*—Well known as the ornamental Monterey pine, which is much cultivated in San Francisco.

*P. Muricata*. \*—Not remarkable.  
*P. Contorta*. \*—Small and bushy, but valuable for shelter against wind. Grows abundantly near Fort Bragg, in the Mendocino country, where it makes the stoutest wind-proof hedge known. Ought to be tried in San Francisco.

*P. Tuberculata*. \*—Always small, seldom higher than 15 to 30 feet.  
*P. Ponderosa*. †—The well-known yellow pine. Attains a height of 225 feet and more, and a circumference of 23 or 24 feet.

*P. Lambertiana*. \*—The equally well known, larger and handsome "sugar pine," or "long-cone pine" of Fremont. Usually grows at great altitudes; exceedingly valuable for timber, and afford the principal supplies.

*P. Coulteri*. †—Found in the lower eastern slope of the Coast Range. Not very large; sometimes attains a height of 75 feet; knotty, but ornamental. It is remarkable for having the largest cone of all the pines, and specimens of its cone, when first known, brought 5 guineas in England.

*P. Sabiniana*. †—This is the nut pine of the foothills, sometimes called the "scrub pine," or "silver pine." The Digger Indians gather the nuts from its cone as a favorite article of food. It is found on the foothills of both the Coast Range and Sierra Nevada.

Mr. Bolander mentioned several species in the group of coast pines which he had not seen, viz: *P. Llaveana*, east of San Diego; *P. Delflexa*, on the summit of the California Mountains; *P. Torreyana*,\* near San Diego.

*P. Monticola*. †—Affords a tall tree and fine timber, said to be harder than the sugar-pine, and might be preferred if its position near the Summit did not make it difficult of access.

*P. Flexilis*. †—This grows in the form of a low shrub on windy heights, so stout and thick that a man can stand on its top. In low altitudes it reaches a height of 100 feet. It is useful only for firewood.

*P. Monophylla*.—This is a stunted, twisted tree, which grows on the eastern slope of the Sierra, where it corresponds to the nut-pine on the western slope. At a distance it resembles in shape the live oak. Its cone is ill shapen and has an offensive odor, but yields a sweet nut.

*P. Balfouriana*.—This species is found near Scott's Valley, in Northern California.

Five species in the above list—*Insignis*, *Muricata*, *Llaveana*, *Delflexa*, and *Torreyana*—are peculiar to the sea coast. Five species—the *Contorta*, *Ponderosa*, *Lambertiana*, *Sabiniana*, *Tuberculata*—are found both in the Coast Range and Sierra Nevada. The *Coulteri* is found only in the Coast Range, eastern slope; the *Monticola* only high in the Sierra; the *Flexilis* only on the upper Sierra and lower slope of the same; and the *Monophylla* only on the eastern slope.

THE HORSE RAILROAD is peculiarly an American institution. George Francis Train endeavored to introduce it into London, but failed to convince Englishmen of its utility. It seems to have been better received on this Continent, having been successfully introduced into the city of Hamburg, where it is pronounced a great convenience to the public. A line was opened between that city and Wansbeck, four miles from Hamburg, which, during the first three months, conveyed no less than 330,000 passengers.

## THE COLOR OF MINERALS.

The light of the sun possesses many remarkable peculiarities. It falls on the clouds, and being reflected from them, they become visible. In falling upon terrestrial objects, it undergoes many remarkable changes. When reflected from certain polished surfaces, it displays various brilliant colors. The action of light upon minerals is a very interesting and useful study, and greatly aids the mineralogist in determining the nature of the mineral he has in hand.

Some minerals reflect the light thrown upon them, others absorb it. Minerals are called opaque, in contradistinction from transparent. Mica affords a well-known example of the latter. In most transparent minerals, the light is more or less reflected from a right line. This refraction is often double, when the object thus observed is represented as two fold. This phenomena is distinctly observable in Iceland spar; which is hence called "double refracting spar."

The colors of minerals originate as in other bodies, by a portion of the rays being absorbed, while those that denote the color of the mineral are reflected. Some minerals are colorless; that is, the rays pass directly through them without refraction. This is the case only when such minerals are perfectly pure, according to the essential character of their chemical combinations. When they contain impurities, they assume different colors, according as those colors are more or less absorbed, or as they reflect the rays of light. Rock crystal, which, when pure, consists of silica alone, is colorless; but it becomes yellow, red, brown or black by a very small admixture of iron or magnesium.

Some minerals exhibit one color only; others a great variety of colors. Fluor spar excels all others in this respect—being found red, enameled green, blue, brown, yellow and white. There are also minerals which display a variety of colors in the same specimen.

Who has not admired the color phenomena of the opal—which is hence called, wherever met with, *opalescence*. By presenting the opal at various angles with a beam of light, the same beam appears green, blue, red or yellow; the various colors at the same time constantly intermingling and interchanging with each other.

The luster of metals is a consequence of the various reflection of the rays of light which fall upon their surfaces. This luster, for convenience of observation and description, is graded into vitreous, metallic, pearl wax and oily luster, etc. Minerals destitute of luster are called dull.

Phosphorescence is another interesting and quite remarkable property of some minerals, intimately connected with light. It was first observed in a species of barytes, known as Bolognian spar. The discovery was accidentally made by a shoemaker of Bologna—hence the name of the mineral. Many minerals have since been found to possess this property. Such minerals, when exposed to the sun for a while, and then

placed in a dark room, emit a phosphoric light; the result perhaps of a gradual discharge of the electricity or magnetism they have gathered, during their exposure to that luminary, as the light very much resembles, what is known as the "magnetic brush," or glow of light from a magnet. This phenomena is especially observable in the diamond. Some limes and sandstones display the same phenomena when scratched. The pieces of quartz will emit a faint light in the dark, even under water, when rubbed together.

Fluor spar, powdered, exhibits a blue or green light, when sprinkled on burning coals or a hot iron. This appearance is also occasionally noticed when it is sprinkled into boiling water. Sometimes all the colors which this mineral manifests in its simple varieties, will appear in brilliant alternations, when powdered and treated as above. A very interesting and amusing experiment may be made in a dark room by sprinkling this mineral on a heated fire-shovel, or a flat piece of heated iron.

CALIFORNIA SILK GROWER'S MANUAL.—Mons. Louis Prevost has presented us with a copy of his manual for silk growers. It is a neatly printed book of nearly 250 pages. The first half of it is made up of the letters which M. Prevost has from time to time written to the various California journals on the subject of silk culture. These are republished in this connection, at the instance of friends who had read them as they appeared, with great interest; and they fully establish the fact that Mr. Prevost is entitled to the credit of being the pioneer in this culture in California. The remaining half of the volume is a complete hand-book for those who wish to engage in this business, and is especially adapted to California.

Mr. P. saw at an early day, that the State offered extraordinary facilities for this culture. He has for twelve years been giving attention to the raising of the mulberry; and for six years to the raising of the silk-worm. As soon as he had satisfied himself that it would be a success, he set about promulgating the fact. With a rare freedom from that narrowness which prompts so many men who think "they have got a good thing," to make the most of it for themselves alone, he has expended much time and money in laying before the public the result of his experience. Just such a persevering, enthusiastic, self-forgetting man as Mr. Prevost, was wanted to do this thing, and he has done it effectually. He will find his reward, not only in the enviable reputation of being the pioneer in what must inevitably become one of the chief resources of this Golden State, but also in the increased money-value of the landed property which he has set apart for the purpose of carrying out his favorite project.

FIVE HUNDRED DOLLARS is offered for an American silver dollar of 1804, if in a good state of preservation. The *Alta* has the advertisement.

EAR-RINGS to clasp, not pierce the ear, are now worn.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Light for the Mines.

MESSRS. EDITORS:—Every article consumed in our mines must be of some interest to you and your subscribers; also every improvement made which renders such articles better and cheaper. Two of our most indispensable articles in a mine are light and powder. I will dwell on the first in the present article, and the latter in my next.

The light generally used by our miners is that of candles; in other countries they use oil or gas—the former is the dearest, the latter the cheapest. Very few people have any adequate idea what a quantity of candles are annually consumed in California, the principal portion of which are used in mines. There are about twelve thousand boxes imported here per annum, and at least nine-tenths of them come from the Eastern States.

## WHAT CANDLES DO WE GET?

The article commonly used is the stearin candle, of an inferior quality. They are called adamantin candles, and have other various names; but in their composition they are nothing more or less than a tallow candle, partly freed from some of the olein contained in tallow. Taking into account the price of twenty to twenty-five cents per pound, at which they are sold, we shall find, by considering the relative amount of light they produce, that they are the most expensive illuminating material of anything in common use.

Beside the heavy expenses for the mine-owners to buy the article named, there is another and more serious consideration to be taken into account, and that is the offensive and unhealthy smoke evolved by their consumption in mines which are not well ventilated. It is hard enough where men work ten hours out of twenty-four, to be deprived, in the day time, of God's natural light; but it is still worse that they should be deprived of the air he has made free for all to inhale, and without which man cannot exist, by the same being poisoned with such unfit material for illumination as enters into the combination of most of our candles. But the question will be asked,

## HOW CAN THIS EVIL BE REMOVED?

The answer is plain. If you wish to use candles, huy none but the best; such as are made either of spermaceti, or pure stearic acid. Most of our candles sold as stearin, hardly deserve the name, as it will be found on analysis that only a small portion of the olein originally contained in the tallow is extracted, and therefore we have neither a pure stearin nor a tallow candle, but a mixture of the two.

The process of the manufacture of candles is so well known, that it would be superfluous to describe it at this time. I will confine myself to a few general remarks.

While I was at the London or World's Exhibition in 1862, candles occupied an important part of the show, and the most perfect article in that line was furnished by Austria. Among one hundred exhibitors, sixty-one made their produce by the old process of saponifying with lime; the remainder used various processes, consisting in the main of the application of high pressure steam—some with and others without the addition of sulphuric acid. The candles exhibited at that time far surpassed anything we generally see in our market; although since that time much progress has been made in this branch of manufacture. Especially is this true in Austria. The Austrians have the claim of superiority combined with cheapness; and it is to be hoped that the manufacturers who supply the California market will examine into these improvements, and let us have an article cheaper for the buyer, and healthier for the miner or consumer.

Tallow is worth in California eight cents per pound; candles twenty cents—leaving twelve cents for the manufacturers; the olein extracted from the tallow sells for seven cents; other losses may be set down at one cent; consequently, for manufacture, there is charged ten cents per pound. It can be profitably done for half the price. I would complain less about the price, however, if the articles were what they are named—a "Stearin Light;" but having lately, twice, bought candles sold for stearin, of such inferior quality that I could not use them; and knowing that our market is usually supplied with the same class of candles, I feel it my duty to call the attention of importers and the public to this fact, with the hope that some steps may be taken to remedy the

evil. One lot which I bought was full of lime—the other as full of sulphuric acid; both of them had Eastern brands on the boxes.

I have lately received some specimens of candles made in Austria, by a new process, and one which I think surpasses anything I have previously met with. I compared it with one of our common stearin candles, and found that the light was about one-third more intense, while its combustibility was much slower. These candles are made from tallow, like all stearin candles, but by the addition of nitric acid and starch. The process is simple and cheap, and it is to be hoped that some one will take up this useful branch of industry and give us a better and cheaper light. Any inventor who can produce a material saving of light or fuel, will be classed among the greatest benefactors of humanity.

In my next I shall give you some account of an improved gunpowder, and the experiments made with it by competent engineers, who have pronounced it a success.

J. MOSHEIMER,

Engineer and Metallurgist.

San Francisco, January, 1867.

## Ventilating Machines.

Translated for the MINING AND SCIENTIFIC PRESS, from the Berg-und Huettenmaennische Zeitung, of Nov. 12, 1866.

BY G. KUSTEL, M. E.

After different systems of ventilating machines had been employed for twenty years in the mines of Belgium, the centrifugal ventilators (fan blowers) have again come finally into favor. The faults of these ventilators were principally found: first, in the great speed (500 to 700 revolutions) connected with a fast wear; second, the low depression which could not be forced above a certain limit, without loss in effect beyond proportion; third, the small effective power, which was not over 0.25 to 0.24.

The new ventilators are distinguished principally by very large size, and some other improvements in construction, by which their effective power surpasses all other machines.

Among the different ventilating machines in use are principally to be considered: First, piston machines; second, ventilating wheels (Fabry's and Lemielle's), and third, centrifugal ventilators.

Mahan & Co's piston machine, yet in use in some mines near Charleroi, is a gigantic, horizontal machine, the square box of which is made of brick-work lined with wood. The piston moves the length of the piston rod back and forward. Two double-acting air boxes (like Nixon's\*) would be better. This machine agrees in main points with the horizontal cylindrical hellowers; but the arrangement is too cumbersome and expensive, losing at the same time too much air.

The rotating piston blowers of Fabry and Lamielle are mostly in use, especially Fabry's airing wheels, by which the highest effect, within certain limits, is attained, as compared with ventilators; but their effect is limited to an air quantity of from nine to thirteen cubic meters per second (17,550—25,350 cubic feet per minute), at a midling pressure of fifty to eighty meters, water column. Large dimensions of these ventilators are hardly practicable.

Of the centrifugal ventilators, four kinds are mainly noticed: Rittinger's, Lamher's, Gallez's and Guibal's.

In Rittinger's ventilator, the wings are so placed as to convey the air into their concave side. On the inner radius the wings are inclined backwards at about forty-seven degrees; on the outer they are nearly radial. Lambert's blower contains straight wings in a radial position. The ventilator is closed on one side; on the other, the circular opening (connecting with the soaking canal) is about nine feet in diameter. The circumference of the blower, revolving on a shaft, has eight narrow openings. Corresponding with these there are eight radial partitions inside, made of sheet iron; so that the wind, gliding on the partitions or shovels, finds its outlet. Gallez's ventilator has from twelve to sixteen curved wings, like the reaction wheels, about twenty-seven feet diameter, and surrounded by a mantle of bricks. Guibal's machine has eight straight wings, forty-five degrees towards the inner radius, backward inclined. The whole wheel is constructed of angle iron-pieces, with wooden wings, in a solid, simple, three-cornered combination. Its diameter is twenty-one to twenty-seven feet, face three to six feet.

Guibal's present ventilators have a diameter of eighteen to twenty feet, and four and a half to six feet face, receiving from thirty

to sixty, or at most ninety, revolutions per minute. It was found that from sixty to seventy per cent. effective power was obtained from the real power applied on the wing shaft. The steam engine of a simple construction gives, also, a high degree of effect, so that the effective power of the whole arrangement may be safely reckoned at 0.30 to 0.40. Using a powerful steam engine, the quantity of soaked air of a mine can be more than doubled in the shortest time, if necessary, in case of accidents.

## Quartz Mining in Central Arizona—List of Mills.

While, from passing over the old Butterfield stage route, Southern Arizona is comparatively well known to many Californians, the newly occupied part of that Territory, the great Central region above the Gila and east of the Colorado, which was not occupied by the whites until 1863, is not so well known.

Of this region we hear most encouraging reports. The mines of gold and silver are numerous, and the advantages of wood and water are remarkable, while the climate is favorable to labor at all seasons. In the face of much annoyance, owing to the inadequate military force (which is now being increased), the enterprising mine-owners have some dozen mills, within a circle of fifty miles of Prescott, and are confident of great results. We have been furnished the following list of these mills, and notes descriptive of their locality, the ores they are working or to work, etc.:

WICKENBURG.—At this point, fifty or sixty miles south of the capital town of Prescott, is the Vulture gold mine, an immense deposit of quartz, of which it is estimated that 10,000 tons lie above the surface. A 5-stamp mill has been in operation nearly two years, and is now paying better than ever. According to latest reports, the ore yields eighty dollars per ton. A 20-stamp mill is being erected by the Vulture Company, of New York (J. D. Cushenbury, superintendent,) and it will probably be completed in February. The engine is sufficient for forty stamps, and that number will be used if the ore continues to give a good return. The Vulture is not directly in a timber district, but it is thought that there is enough mesquit in the ravines about Wickenburg to supply fuel for some years. Water is abundant at the point where the mills are fixed, upon the Hassayampa river, some eighteen miles from the lode. Supplies are shipped from San Francisco, via Fort Yuma, to La Paz, on the Colorado, from whence there is an easy wagon road, a distance of 110 miles, to Wickenburg.

STERLING MILLS.—There are two 5-stamp mills on the Sterling gold lode, six miles south of Prescott. Only one mill is in operation, under lease to W. T. Flower, an experienced mining superintendent. Latest advices state that the ore is yielding \$100 per ton. The Sterling is a large lode, and its proximity to the capital, as well as the presence of abundant timber and water, makes it a desirable property. The ore is of a soft nature and shows much free gold. The lode is a large one, and in the vicinity there are other lodes of much promise, such as the Mechillo and the Umpqua. A 10-stamp mill has lately been sent from San Francisco for the latter.

LYNX CREEK.—This district, twelve miles east of Prescott, is noted for its rich placers, which were worked for several years with great success. It was on this creek that Uncle Joe Walker, the pioneer of Central Arizona, had his cabin. The first quartz mill (two stamps) was erected in 1865 by Bowers & Bro., merchants in Prescott, and situated at Fort Whipple. It is upon the Accidental gold lode, and, although of little account, has sufficed to prove the wealth of that lode. A larger mill is proposed, and there would seem to be ore enough of a rich quality to warrant it. Mr. Lamson, formerly of Gold Hill, Nevada, and well known in New York and San Francisco, in the spring of 1865 took two Little Giant engines and Thunderbolt crushers to Prescott. One of the mills was erected on Lynx Creek, to work the Boston and other gold lodes. It is understood that the crusher gave out after the first week of regular work, and that ten stamps have been ordered in its place, for which the engine would seem to have ample power. Messrs. Tyson and Coulter, formerly of San Francisco, have a 10-stamp mill on Lynx Creek, and are now working the Eureka lode. The ore is abundant, but somewhat refractory, and a change in the amalgamating pans has lately been made. Mr. W. C. Reed, who is also interested in the mill, went from here on the 15th with a process for desulphurizing, which he thinks will prove a success. Most

of the ores of Lynx Creek, yet worked, show sulphurets, but it is believed that they are all very rich and can be profitably worked. Lynx Creek is in a forest of pine and oak, and the water is never-failing.

BIG BUG.—Five miles east or south of east from Lynx Creek is Big Bug district, in which are certain lodes already well known in San Francisco, such as the Big Bug, the Galena, the Ticonderoga, and the Dividend. Borger's 10-stamp mill, owned by Borger, Wormser & Co., and Gray & Co., is one of the best in Central Arizona. Mr. Borger has spared no pains to make it perfect. The ores of the Big Bug and Galena mines have been tried, and a number of gold bars have been sent to San Francisco. It is thought that the Big Bug ores are very rich; but, like those at Lynx Creek, they have not yet been thoroughly tested. The second Lamson mill has been erected on the Ticonderoga lode in this district, of which Col. King S. Woolsey, the noted Indian fighter, is the chief owner, but it will not be put in operation until stamps are received, the Colonel having no faith in the crusher, after the result at Lynx Creek, where he is also largely interested. On the Agua Frio, in the Big Bug district, and near to his well-known ranch, Col. Woolsey has a 5-stamp mill running by water-power.

TURKEY CREEK.—This district is some thirty miles from Prescott, and abounds more in silver than in gold mines. A 10-stamp mill, sent out in 1865 by a Philadelphia company, and commonly known as the Vickroy mill, has, after long delay, just been put in operation upon the Bully Bueno gold lode. Major Coffin, late of the army of the Potomac, is in charge, and the company is said to be one of large means. The ore from this lode is of a curious character, the gold being found in hornblende, but it is considered very rich, and late reports are flattering in the extreme.

The Big Bug and Turkey Creek districts are well furnished with wood and water, and the mills have all been put up in good style, with commodious buildings and all necessary appointments.

This brief outline of milling operations in Central Arizona, while it is given too early to admit of the announcement of positive results to any extent, shows a degree of enterprise and confidence on the part of the people of that region which must be commended.

Our informant assures us that the practical miners from Nevada, Idaho and other Territories, and from this State, who are interested in operations in Central Arizona, speak of the prospects as better than those of any other district they have known at the same stage of development. They say that if such substantial progress has been made with constant Indian troubles, and extravagant expenditures for living and transportation, there will be no limit to the advancement when these obstacles are removed, and the great value of the lodes is proven, as they think it speedily will be.

The additional force of four companies of troops for the region about Prescott, secured by Governor McCormick, will keep the roads open, protect the mails, the mines, ranches and settlements, and do something towards the necessary aggressive war upon the Apache, although a larger force than has yet gone to the Territory will be needed for its proper prosecution.

The experiments in farming in Central Arizona have been very satisfactory. In his message to the last Legislature (September, 1866), the Governor says:

"The valleys of the Territory, more extensively cultivated this year than ever before, have produced an abundant harvest. The yield of corn, vegetables and small grain, is such as to prove that henceforth we need not look abroad for food; and I make no doubt that if assured that their crops will be bought and promptly paid for, and they are properly protected from Indian incursions, our ranchmen will, during the ensuing year, by the favor of Heaven, raise all the breadstuffs that may be required to subsist the military force in the Territory. Here in Central Arizona, even in the mountain districts, where comparatively little was expected in the way of agricultural success, the pursuit of the husbandman is likely to be one of the most profitable. The heavy rains of the present season indicate that irrigation will seldom be necessary, and the fertility of the soil is remarkable. It seems as though everything planted attained the most luxuriant and complete growth in the shortest possible time. The grains, vegetables and melons, taken promiscuously from any of the ranches, and raised without fertilization of any kind or other than the simplest care, would command a premium if placed in competition with the products of the richest and most expensive farms and gardens of the Atlantic States.

\*Nixon's machine is at work at the coal mines of the "Navigation Colony," South Wales. The pistons are twenty-two feet by thirty, the stroke seven feet.



## Mechanical.

## Superheated Steam.

Henry W. Bulkley, of New York, Engineer, in a communication to the *American Artist* of December 12th, speaks as follows of the use and economy of superheated steam: The higher the degree of superheating employed, the greater are the economical results, but not in a direct proportion. The greatest benefit of superheating results from the addition of the first few degrees of heat (say 50 degrees), when its expansion from the previous saturated condition is very great, as its surplus moisture is thus changed into pure steam. After the steam is thoroughly dried, any further superheating expands it as a perfect gas, doubling its volume by the addition of 480 degrees to its temperature. If steam could be used red hot its efficiency would be largely increased, but as with engines as at present constructed, it is not practicable or convenient to employ steam at such extreme temperatures, we are unable to realize the full economy of superheating. We may, however, evaporate the water it holds in suspension, and raise its temperature to 375 or 400 degrees in the cylinder, with the greatest safety, and effect thereby a saving in fuel of from 25 to 30 per cent. The practical experience of Mr. Bulkley in the use of superheated steam has convinced him of this.

An engine operated by moderately superheated steam works *livelier and steadier* (as there is no water in the cylinder) than with the mixture of steam and water commonly employed, making with it more revolutions, with a large reduction in the amount of coal used. The prejudice against the use of such steam is entirely unfounded, and as few will dispute, the economy attending its use, experience will convince all doubters that no reasonable objection exists to its universal adoption.

Care should be exercised in the employment of superheated steam, with ordinary appliances, that it is not raised above 400 degrees Fah.; as, when its temperature much exceeds that point, it becomes fatal to economy, by the drying action it exerts upon the lubricating material and for the valves and pistons. This, we presume, is one of the great difficulties in the way of the employment of superheated steam in Danforth's Generator; at least we were told that such was the fact in the experiments conducted with one of these generators in this city. We have heard nothing of late in regard to any progress being made in New York or elsewhere, with the Danforth Generator.

The largest kettle in the world is employed in the extensive soap and saleratus factory of Mr. B. T. Babbitt, No. 74 Washington street, New York. This kettle is fifteen feet deep by sixty-three in circumference, and is made of boiler iron. What is said to be the largest cast iron kettle ever made on this continent, was cast out at the Union Foundry, in this city, in the fall of 1861. Its weight was 9,114 pounds; its capacity 1,316 gallons. It was intended for soap boiling.

The art of welding iron is older than that of melting or casting it. By the early method of producing iron from the ore, it was turned out in the condition of wrought iron. The same method is still employed by the uncivilized natives of the interior of Africa and Asia. The iron so made is superior to that derived from cast iron by the puddling process now employed; but the process is impracticable on a large scale.

**REDUCTION IN THE PRICE OF PLATE GLASS.**—One hundred years ago, a plate glass mirror, fifty inches long by forty wide, cost, in England, \$300. In 1845, the price of such a mirror was reduced to fifty dollars; now the same can be bought for twenty dollars.

## Annealing of Steel.

We have noticed that, after the smith had finished his work and wished to leave the steel or iron forging in a condition of sufficient ductility for the lathe workman or filer to operate upon, he would carelessly heat the forging and either insert it into the ashes and coal-dust of the forge or heedlessly throw it upon the ground beside the anvil-block; consequently when the turner or filer begins his work he finds it full of small hard spots, some of them exceedingly minute, and technically called "pins," which spoil the cutting edges of his tools and destroy his files. Finding it impossible to proceed further in his manipulations he takes the unfinished article from the lathe or vise and sends it back to the forger to be re-annealed and returned to him. We have seen this process repeated two or three times on some kinds of work, when a little knowledge and care would remedy the whole thing.

In annealing, the steel should be heated slowly and carefully, as there is as much danger in over-heating as there is in forging, and the whole article must be thoroughly heated through and brought to no higher temperature than a "light red" heat. If the article is long, like a spindle, it must be turned frequently in the fire, to prevent its warping or becoming sprung by the unequal expansion upon its sides; and at the same time be careful to heat it equally the entire length. The forger ought always to have an iron box of dry powdered charcoal by his forge, and in this quickly insert the article that is to be annealed, and cover it close with the coal-dust, so that the air cannot come to it, and there let it remain until perfectly cold and no sign of warmth be perceptible. If this is carefully done, the lathe workman or the filer will have no cause of complaint about "pins" in the course of his operations.

Some forgers hurry the articles that they wish to anneal in powdered or air-slacked lime, cast-iron borings and sawdust, etc. These may answer a very good purpose, but they are in no way equal to the box of charcoal dust.

There is another method called "fire annealing" that is practised to some extent. It consists in heating the steel to a red hot and then holding it in a dark place until a faint glow of heat is seen upon it, and then quenching the heat that remains in it in water. This may answer when there is need of the forging to be wrought upon immediately, but it is an operation that we do not approve of, and is not as effectual as the operation that we have described with coal-dust. Let any one who works in steel try the various methods, and they will give a hearty approval to the box of charcoal dust. *American Artisan.*

Annealing or softening of iron is accomplished by a process of slow cooling; tempering or hardening is effected by a more or less rapid cooling, according to the degree of hardness which is desired in the article operated on. There are many substances besides iron and steel which become hard and brittle on being rapidly cooled; the most important of which, in the arts, is glass. Hence all glass manufacture, requiring strength or toughness, is subjected to a very slow process of cooling or annealing. The time required for this process in glass ware, depends upon the thickness or bulk of the articles operated upon. Hence, it is desirable, in that manufacture, that but one particular kind of ware should be placed in the annealing oven at the same time. One of the chief inconveniences of small and local glass establishments is attributable to this fact. Such establishments cannot conveniently put their whole force upon any one article of manufacture; but are compelled to divide up between two or three or more articles, at one and the same time.

Cast iron loses its brittleness in the annealing oven, and becomes almost as pliable as wrought iron. Cast iron nails, annealed, have of late come into quite extensive use for certain purposes.

Copper forms an exception to the general rule of metals in tempering or hardening. This metal is actually made softer and more flexible by being plunged into cool water when red hot, than by any other treatment to which it can be subjected. The gradual cooling of copper, in the same way that iron or steel is annealed or softened, hardens that metal. When it is desirable to render copper very soft, and the surface very clean, a small quantity of sulphuric acid, should be put into the water, which will have the effect of removing all the black scale, etc., from the surface.

## Scientific Miscellany.

## A New Furnace of Great Heating Power.

M. Deville, of Paris, has recently constructed a furnace of extraordinary power. The furnace consists of a flame of coal gas, inclosed in a chamber built of some non-conducting substance, into which a jet of pure oxygen is blown. In this way nothing but the material required for perfect combustion is admitted, thus obviating the objection to the use of common air which involves the necessity of introducing into the furnace a volume of inert nitrogen, much exceeding that of the oxygen consumed. When cold air (the cold blast) is used, a large portion of the heat generated is thus wasted in heating this large excess of nitrogen, to no purpose. This excess, in volume, is as one of oxygen to four of nitrogen—in weight, four of oxygen to fourteen of nitrogen. Hence it has been found highly advantageous to apply the waste heat of the furnace in raising the temperature of the air which feeds the flame, thus forming what is technically called the *hot blast*. The use of pure oxygen is not economical; but where a very high temperature is required, it is indispensable. In Deville's furnace, platinum, the most refractory of the elements, when placed upon a bed of lime and subjected to the flame, is easily melted. About one cubic foot of coal gas and one of oxygen will reduce one pound of this metal. The temperature generated in the Deville furnace has been estimated to be over 14,000 degrees Fahrenheit, or about five times higher than that required to melt cast iron.

This, it will be perceived, is an approximation to the idea which we advanced in our issue of the 12th ult., of the *desideratum* of some contrivance by which oxygen might be so cheaply generated as to render economical its application to metallurgical purposes. It appears that with the above furnace, one cubic foot of oxygen (the production of which cannot be a matter of very great cost) is made to reduce *one pound of platinum*. May we not have here an economical application of the idea suggested? If platinum could be readily reduced from its ores by heat, it would certainly seem as though an important point had already been gained. Platinum usually occurs in the form of a mineral alloy, with iron, gold, iridium, copper, etc., from which it is separated only in the wet way, and at great cost. When we have pure platinum, it may be readily drawn or hammered to any desired form, welded, etc.; but it is melted only at a very high heat—a heat quite unattainable in ordinary furnaces. If platinum can be separated from its natural alloys, by a simple furnace operation, it could then, by aid of Deville's furnace, be readily cast into crucibles, and introduced for numerous other useful purposes where it has not heretofore been employed, but where it would be of almost inestimable value in the arts.

**ARTIFICIAL SALTPETER.**—Mr. J. Bernhard, of Paris, has recently produced an artificial saltpeter by a process which at the same time yields, as by products, white lead and ammonia. He proposes to mix 157 parts of nitrate of lead with 39 parts of carbonate of ammonia, to obtain carbonate of lead and nitrate of ammonia. To the nitrate of ammonia thus obtained he adds 23 parts of lime, by which nitrate of lime is produced and ammoniacal vapors given off, which are collected in the usual way. The nitrate of lime remaining is mixed with 87 parts of sulphate of potash, by which an insoluble sulphate of lime is formed, and a soluble nitrate of potash, which, upon being concentrated, yields saltpeter in crystals.

A BEAUTIFUL VARNISH, limpid and clear, of a slightly brown color, suitable for carriages, etc., may be readily made by heating, under pressure, copal resin, with one-third of drying linseed oil.

**TURPENTINE FROM PETROLEUM.**—It is stated in a late issue of Dumas's *New York Journal of Applied Chemistry*, that a series of scientific experiments, recently instituted in London, have resulted in extracting turpentine from petroleum. The process is said to be safe and economical; and it is furthermore claimed that the turpentine can be obtained for about one-third the price heretofore paid for that article from North Carolina.

Naptha, one of the well known products of petroleum, has for several years been used in this country, for many purposes to which turpentine has heretofore been applied. A kind of petroleum was exhibited in this city, some two years ago, which was obtained from an oil spring in Colusa county, which, according to our present recollection, had very much the appearance and smell of turpentine. These facts would seem to attach much probability to the reported extraction of a genuine article of turpentine from petroleum. Such a discovery, if it be genuine, will very materially interfere with the turpentine business of this State.

**FOSSIL VINES.**—At a late meeting of the Imperial Horticultural Society in Paris, Dr. Thudichum of London, exhibited specimens of fossil vine leaves from a mine in Hesse Darmstadt. These, having been found lying under the basalt, were estimated by him to be above one hundred millions of years of age, and he considered that these facts and the peculiar character of the wild vines of the Rhine completely contradicted the almost universal belief that the vine had come to us from Asia. He believed that the vine was indigenous to all countries where it prospered now, and invited horticulturists to make experiments with the seeds of wild vines, particularly those of France, as they might thus obtain results of importance to horticulture.

**PHOTOGRAPHIC COLORS.**—A correspondent of the *French Repertoire de Photographie*, writing from South America, says: "Some time since, I took a positive portrait of my wife on glass. The weather was very fine, but on coming out of my dark-room I observed that the light appeared very yellow and somewhat obscured, and I then remembered that there was a total eclipse on that day. After developing and fixing my positive I found all the colors of my wife's dress faithfully portrayed on the film. The dress was of blue flowers on a black ground, the cap trimmed with blue and yellow ribbons, and all these colors were accurately reproduced, even the flesh tint of the face and hands were perfect. Unfortunately, all these colors disappeared after a lapse of ten minutes." The writer does not say whether any besides himself saw this portrait of his wife. This is, however, only one of many cases of evanescent coloring reported within a few years.

**RELATIVE PERSISTENCE OF DIFFERENT SOLAR RAYS.**—An experiment by Abbé Lathorde seems to show that waves in the sunbeam, of higher velocity, producing the perception of blue, make a stronger impression than waves of lower velocity. A rotating disk of metal having slits in its circumference so as to admit and intercept the solar beam, is placed in a dark chamber, between it and the observer is a ground glass screen to receive the beam. When the disk rotates slowly the separate appearances of the beam are distinguished. At higher velocities the image of white light is tinged with blue, green, rose, white, green, blue, in this order. After the second blue, the image is white at all higher velocities of rotation.

**A USEFUL HINT.**—It sometimes becomes desirable to test a piece of gilding. Gold leaf or plate may be known from a gold-colored alloy by the following test. Take a solution of common chloride of copper and apply a drop to the gilding; if it is gold, no effect will be discernable; if it is gold alloy or any other brass imitation, a brown stain will instantly be observable.

**THE FLORA** of the State of Pennsylvania is found to have undergone, of late, remarkable changes, plants that were formerly rare being now quite abundant. This effect is attributed to the spread of railways.

ALUMINUM and tin are now gilded and silvered so neatly that the layer cannot be disturbed by the hardest burnisher.



## WEEKLY STOCK CIRCULAR

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING,  
January 25, 1887.

## CITY STOCKS.

During the week under review the transactions in city shares were mainly confined to California Steam Navigation Company and Spring Valley Water Company, the former selling within a range of 60@61, seller 10, and the latter steadily obtaining 62, with a slight improvement at the close.

We present in the annexed table a careful compilation of the operations of the Savings and Loan Societies for the half year ending in this month. It will be seen that they exhibit a steady increase in business, having added \$4,000,000 during the year 1886 to their deposits, and showing at present an aggregate of \$11,000,000:

## Semi-Annual Reports of the San Francisco Savings and Loan Societies.

NAMES.	Date of Report.	Deposits.	Loans.	Earnings.	Reserve Funds.	Expenses and Federal Tax.	Cash on Hand.
Hibernia Savings and Loan Society.....	January 21, 1887.	\$2,241,000.00	\$4,073,233.95	\$84,000.00	\$122,523.19	\$23,019.07	\$350,049.55
Savings and Loan Society.....	January 2, 1887.	2,292,335.45	2,335,472.43	138,686.73	87,104.54	\$8,128.90	150,884.55
French Savings and Loan Society.....	January 15, 1887.	1,822,654.13	1,801,819.95	116,300.67	44,105.75	7,945.00	222,734.43
San Francisco Savings Union.....	January 8, 1887.	1,002,998.22	922,233.47	56,435.25	74,795.44	9,631.91	90,901.08
Cal. Building, Loan and Savings Society.....	.....	.....	.....	.....	.....	.....	.....
Odd Fellows' Savings Bank.....	.....	.....	.....	.....	.....	.....	.....
Totals—January 1887.....	.....	\$10,358,888.40	\$10,195,914.80	\$64,469.35	\$325,918.92	\$48,718.88	\$892,762.11
Totals—July, 1886.....	.....	8,760,164.52	8,827,110.05	493,760.64	252,918.94	.....	630,939.27
Totals—January, 1886.....	.....	7,005,061.63	6,756,302.83	306,060.30	215,455.63	.....	574,603.10

\* Last annual report, September 10th, 1886. Assets at that date, \$300,000.  
† Went into operation December 1st, 1886, and has met with a fair degree of success.

Of the above institutions, the Hibernia disburses a dividend of 11  $\frac{3}{4}$  cent. per annum to its depositors out of the earnings during the past six months; Savings and Loan Society, 11; French Society, 12; and the Savings Union 10  $\frac{3}{4}$  cent. per annum to ordinary, and 12 to term depositors.

## MINING SHARE MARKET.

The stampede in mining stocks this week has created a marked sensation in all circles. It is often very difficult to account for the caprices of the mining share market, but during the past few days the decline has been of so serious a nature that there would seem to be some interpretation of the causes which have led it. So far as we can learn (and we have taken some pains to obtain reliable information), with, perhaps, one or two exceptions, leading mines show as much intrinsic wealth at present depths, and give as much promise for the future, as at any time within the past six months. With regard to the Yellow Jacket company, the case pending before the United States Supreme Court and its probable return to the lower courts for revision and re-trial, together with the almost impassable condition of the roads leading from the mine, rendering a dividend doubtful this month, and the rumored impoverishment of certain portions of the claim, are causes in themselves sufficient to create a slight panic. Added to these, a strong bear movement in other stocks was inaugurated early in the week, giving

great impetus to a general decline. Yesterday a decided rally took place, and a still further advancement may be anticipated.

HALE & NORCROSS—continues out of the market. At the close \$2,600 per foot is asked. This company's mine remains in a favorable condition. They have commenced operations on the new shaft.

SAVAGE—with the balance of the list, has declined very materially during the past week, selling at \$2,000@2,010, dropping to \$1,870 and \$1,700, seller 30, and closing at \$1,800. The ore extracted from this company's mine during the week ending January 19, amounted to 1,745 tons, showing an assay value of \$61,812; previous week, 1,016 tons, valued at \$35,923. In winze No. 1 from the 7th station water has become troublesome—so much so as to prevent working at that point for the present. In a drift made from this winze, at a depth of 50 feet, five feet of ore assaying \$50 per ton were found; the presence of a large body of water prevented further developments. In winze No. 3, on the south line, also from the 7th station, they have followed the ore—which is said to be of a good quality—to an incline depth of 25 feet. The south mine looks well, showing quite an improvement in the "breasts."

CROWN POINT—also sympathized with the general decline, opening at \$1,290, then selling at \$1,280@1,290, falling to \$1,100@1,000, and closing yesterday at \$1,040. During the week ending January 18th, 871 tons of ore were extracted; previous week, 980. In drifting west fifteen feet on the 400-foot level, it is said a fine body of ore, about three feet wide, was found, and in working south on the east drift, same level, to the distance of 30 feet, some metal was obtained. This vein is 630 feet from the west or main deposit of ore in the mine. The receipts of bullion to this date exceed the returns of last month.

YELLOW JACKET—exhibits the greatest decline on the list, a large number of shares changing hands, selling early in the week at \$1,235@1,240, rapidly declining to \$990, then to \$850 and \$720—a recession of \$520 in four days—and closing at \$760. From a report, embracing the two first weeks of the present month, we learn that 2,780 $\frac{1}{2}$  tons of ore were extracted from the mine, and that during the same period the bullion yield had been \$41,518. It is thought that the bullion product of the past week will amount to \$60,000. The ore lately found east of the shaft is 180 feet east from the deposit of ore on the fourth level, and is said to be 17 feet wide, and of good average quality. A new level, called the 230-foot level, is now being opened.

GOULD & CURRY—has been more active than for some time past, receding from \$575 to \$510, rallying to \$570, then falling to \$500, and the close selling at \$550. The tunnel from the D street shaft of this mine, at a rise of 25 feet, is said to be in good ore. All the chambers look well, and the dumps are full.

OPHIR—improved from \$158 to \$162.50, seller 30, receded to \$140, rallied to \$150, and closed yesterday at \$157.50. The north stope in the 9th station is said to look very promising. The 10th station drift is in 20 feet.

CHOLLAR-POTOSI—was dealt in to a considerable extent, advancing from \$222.50 to \$233, receding to \$215, and closing at \$212, seller 30. No material change in the mine. Forwarded to custom mills during the week ending January 19th, 896 tons of ore; previous week, 780 tons. . . . EMPIRE receded from \$185 to \$170, and at the close sold at \$172.50. . . . IMPERIAL from \$155 to \$145, closing at \$149. . . . BELCHER from \$155 to \$135. . . . CONFIDENCE from \$48 to \$40. . . . BULLION rose from \$31 to \$40, then sold at \$33. . . . OVERMAN varied little, selling at 25.75@26. . . . DANEY at \$5@4.50. An assessment of fifty cents per share was levied on this stock on the 22d instant.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$890,524.

WORDS FOR MINERS.—The Gold Hill Daily News, Nevada—a medium of good authority—saith thus:

The MINING AND SCIENTIFIC PRESS is a weekly journal, published in San Francisco, which is entitled to the subscription patronage of every practical miner in Nevada, and every person interested in Nevada or California mining operations. It is a well gotten up sixteen-page quarto; and its reading would tend vastly to the particular "posting" and general enlightenment of our working sort of folks. Subscribe for it. Five dollars a year; three dollars for six months. It should have an agency in Virginia and Gold Hill; but we see none advertised in its columns. Every new improvement in mining implements and operations are fully described by words and illustrated by wood cuts in this excellent publication. A specimen number can be seen at our office.

## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

## Monday, January 21.

4 shs Gould & Curry at 520 per foot.  
4 shs Gould & Curry at 510 per foot.  
1 sh Overman at 25 per share.  
50 shs Bullion at 39@35 $\frac{1}{2}$  per share, b 30.  
10 shs Bullion at 31 $\frac{1}{2}$  per share s 10.  
10 shs Bullion at 33 per foot, s 30.  
45 shs Bullion at 34@33 $\frac{1}{2}$  per share.  
30 shs Daney at 5 per foot.  
1 sh Belcher at 150 per foot s 5.  
4 shs Yellow Jacket at 1240@1230 per ft.  
3 shs Imperial at 154 per share.  
3 shs Imperial at 153 per share.  
3 shs Cal Steam Nav Co at 50 per ct.  
10 shs Sierra Nevada at 6 per share.  
12 shs Confidence at 47@47 $\frac{1}{2}$  per share.  
20 shs Confidence at 46@45 per share, s 5.  
10 shs Chollar-Potosi at 225 per foot.  
1 sh Chollar-Potosi at 228 per foot.  
1 sh Savage at 1950 per foot s 90.  
2 shs Savage at 1950@1960 per foot s 50.  
1 sh Savage at 2005 per foot.  
3 shs Savage at 2050@2040 per foot h 30.  
3 shs Savage at 2010 per foot.  
50 shs Spring Valley W W at 63 per sh.  
36 shs Crown Point at 1280@1290 per foot.  
4 shs Crown Point at 1325 per foot 30 d.  
4 shs Crown Point at 1300 per foot, h 10.  
36 shs Ophir at 162 $\frac{1}{2}$  per foot.  
50 shs Ophir at 162 $\frac{1}{2}$  per foot, s 30.  
60 shs Ophir at 167 $\frac{1}{2}$  per foot, h 30.

## AFTERNOON SESSION.

15 shs Bullion at 34 per share.  
10 shs Chollar-Potosi at 235 $\frac{1}{2}$ @235 pr ft h 30.  
10 shs Chollar-Potosi at 230@233 per share  
6 shs Chollar-Potosi at 230 per foot s 30.  
3 shs Yellow Jacket at 1250@1255 pr ft b 30.  
1 sh Yellow Jacket at 1245 pr ft h 5.  
6 shs Savage at 1950@1970 per share, s 60.  
1 sh Savage at 1960 per foot, s 90.  
1 sh Savage at 2000 per foot s 30.  
8 shs Savage at 2010@2060 per foot.  
1 sh Savage at 2050 per foot, h 30.  
1 sh Savage at 2005 per foot, h 6.  
15 shs Overman at 25 $\frac{1}{2}$  per share.  
10 shs Overman at 65 per share, s 16.  
8 shs Crown Point at 1280 per foot.  
8 shs Imperial at 154 per share.

Amount of sales.....\$123,714 00

## Tuesday, January 22.

84 shs Ophir at 167 $\frac{1}{2}$  per foot, h 30.  
24 shs Ophir at 162 $\frac{1}{2}$  per foot.  
72 shs Ophir at 150 per foot.  
55 shs Overman at 25 $\frac{1}{2}$  per foot.  
50 shs Spring Valley Water at 62 per ct.  
5 shs Cal Steam Nav Co at 55 $\frac{1}{2}$  per ct, s 30.  
5 shs Cal Steam Nav Co at 59 $\frac{1}{2}$  s 50.  
5 shs Cal Steam Nav Co. at 50, s't'r day.  
6 shs Cal Steam Nav Co at 59 $\frac{1}{2}$  per ct, s 50.  
2 shs Savage at 1950 per foot, s 30.  
1 sh Savage at 1945 per foot.  
1 sh Savage at 1935 per foot, s 3.  
2 shs Savage at 1900 per foot, s 60.  
6 shs Confidence at 45 per share h 30.  
5 shs Confidence at 42 per share s 30.  
10 shs Confidence at 43 per share.  
5 shs Confidence at 44 per share.  
2 shs Yellow Jacket at 1250 per foot, h 30  
3 shs Yellow Jacket at 1175 per foot.  
20 shs Gould & Curry at 565 per foot.  
4 shs Gould & Curry at 570 per foot.  
40 shs Bullion at 38 per foot.  
43 shs Bullion at 39 per share.  
20 shs Bullion at 40@39 per share h 10.  
15 shs Bullion at 40 per share b 5.  
15 shs Bullion, at 35 per share, s 30.  
10 shs Bullion at 37 per share  
15 shs Chollar-Potosi at 230 per foot.  
3 shs Chollar-Potosi at 220 per foot b 3.  
15 shs Chollar-Potosi at 225 per foot.  
3 shs Chollar-Potosi at 230 per foot, h 5.  
16 shs Crown Point at 1275@1390 per foot.  
4 shs Belcher at 152 $\frac{1}{2}$  per share.  
1 sh Belcher at 151 per foot.  
2 shs Belcher at 150 per foot s 30.

## AFTERNOON SESSION.

84 shs Ophir at 160@150 per foot.  
24 shs Ophir at 154 per foot.  
12 shs Ophir at 154 per foot.  
1 sh Cal Steam Nav Co at 50 $\frac{1}{2}$  per ct s 10.  
9 shs Belcher at 150 per foot b 3.  
20 shs Daney at 4 $\frac{1}{2}$  per share.  
1 sh Imperial at 155 per share.  
40 shs Overman at 26 per foot.  
3 shs Savage at 1900 per foot.  
1 sh Savage at 1960 per foot, b 30.  
3 shs Savage at 1900 per foot.  
1 sh Savage at 1900 per foot, h 30.  
2 shs Savage at 1570 per foot.  
1 sh Savage at 1872 $\frac{1}{2}$  per foot.  
6 shs Yellow Jacket at 1150 per foot b 15.  
20 shs Chollar-Potosi at 223@225 per foot.  
4 shs Chollar-Potosi at 224 per foot.  
30 shs Bullion at 40 per share, h 30.  
20 shs Bullion at 39@38 per share b 30.  
25 shs Bullion at 38 per share.  
20 shs Bullion at 36 per foot.

Amount of sales.....\$167,237 00

## Wednesday, January 23.

84 shs Ophir at 152 per foot.  
24 shs Ophir at 150 per foot.  
24 shs Ophir at 140 per foot.  
60 shs Ophir at 143 per foot.  
24 shs Ophir at 142 per foot.  
3 shs Cal Steam Nav Co at 50 $\frac{1}{2}$  per cent.  
2 shs Cal Steam Nav Co. at 61 pr ct s 10.  
32 shs Gould & Curry at 565 per foot.  
7 shs Imperial at 150 per share.  
4 shs Imperial at 148 per share.  
2 shs Savage at 1850@1825 per foot.  
2 shs Savage at 1800 per foot s 30.  
10 shs Savage at 1800@1775 per foot.  
2 shs Savage at 1750 per foot, s 60.  
20 shs Bullion at 38@39 per share.  
10 shs Bullion at 35 per share, s 30.  
10 shs Bullion at 35 per share s 3.

1 sh Yellow Jacket at 835 per foot h 10.  
10 shs Confidence at 40 per share.  
6 shs Crown Point at 1200 per foot.  
6 shs Crown Point at 1150 per foot.  
30 shs Chollar-Potosi at 230 per share.  
5 shs Chollar-Potosi at 217 pr sh, s 3.  
10 shs Chollar-Potosi at 219 pr foot.  
2 shs Chollar-Potosi at 215 per foot.  
15 shs Chollar-Potosi at 219 per foot.  
2 shs Chollar-Potosi at 220 per foot.  
17 shs Overman at 25 $\frac{1}{2}$  per share.  
10 shs Overman at 26 $\frac{1}{2}$  per share, h 10.  
5 shs Overman at 26 per share, h 10.  
\$4,000 Legal Tender Notes at 73 $\frac{1}{2}$ ¢.  
\$5000 Legal Tender Notes at 74¢.

## AFTERNOON SESSION.

3 shs Yellow Jacket at 830 per foot, h 10.  
6 shs Savage at 1976 per foot b 30.  
2 shs Savage at 1750@1730 per foot.  
2 shs Savage at 1700 per foot, s 30.  
20 shs Confidence at 40 per share.  
10 shs Overman at 25 $\frac{1}{2}$  per share h 10.  
20 shs Chollar-Potosi at 217@215 per foot.  
6 shs Chollar-Potosi at 221 per foot b 10.  
15 shs Chollar-Potosi at 217@216 pr foot.  
20 shs Crown Point at 1125 per foot, s 30.  
8 shs Crown Point at 1150 per foot, s 30.  
16 shs Crown Point at 1125 per foot.  
8 shs Crown Point at 1115@1100 per foot.  
3 shs Belcher at 135 per foot.  
1 sh Belcher at 137 per ft h 10.  
2 shs Ophir at 140@140 $\frac{1}{2}$  per foot.  
100 shs Spring Valley Water Co at 62 p et.  
50 shs Spring Valley W W at 62 per ct s 30.  
\$10,000 Legal Tender Notes at 74¢.

Amount of sales.....\$137,773 00

## Thursday, January 24.

108 shs Ophir at 150 per foot.  
50 shs Ophir at 150 per foot, h 10.  
15 shs Chollar-Potosi at 217 per foot.  
16 shs Chollar-Potosi at 215 per share.  
10 shs Chollar-Potosi at 220 per share h 30.  
5 shs Chollar-Potosi at 215 per foot, s 10.  
6 shs Chollar-Potosi at 215 per foot s 30.  
17 shs Confidence at 40 per share.  
7 shs Confidence at 45 per share.  
5 shs Confidence at 45 per share h 30.  
10 shs Confidence at 40 per share.  
1 sh Savage at 1720 per foot.  
2 shs Savage at 1700 per foot, s 30.  
85 shs Bullion at 36@31 per share.  
10 shs Bullion at 32 per share, s 30.  
10 shs Bullion at 31 per share s 10.  
6 shs Empire M & M Co. at 170 per sh.  
2 shs Yellow Jacket at 850 per foot h 30.  
1 sh Yellow Jacket at 740 per foot s 15.  
4 shs Gould & Curry at 550 per ft, h 30.  
20 shs Gould & Curry at 530 per foot, h 30.  
4 shs Gould & Curry at 520 per foot.  
4 shs Gould & Curry at 500 per foot.  
16 shs Crown Point at 1230@1020 per foot.  
8 shs Crown Point at 1000 per foot s 30.  
8 shs Crown Point at 1020@1025 pr ft, b 30.  
16 shs Crown Point at 1000 per foot.  
13 shs Imperial at 145 per share.  
15 shs Overman at 25 $\frac{1}{2}$ @26 per share  
10 shs Yellow Jacket at 755 per foot.  
1 sh Yellow Jacket at 750 per foot.  
1 sh Yellow Jacket at 745 per foot.  
2 shs Yellow Jacket at 730 per foot b 30.  
7 shs Yellow Jacket at 750 per foot b 3.  
4 shs Chollar-Potosi at 217 per foot.  
4 shs Crown Point at 1030 per foot h 30.  
24 shs Crown Point at 1000 per foot s 30.  
12 shs Crown Point at 1000 per foot.  
3 shs Savage at 1700@1725 per foot, s 30.  
5 shs Savage at 1676 per foot, s 6.  
4 shs Savage at 1700 per foot.  
12 shs Imperial at 145 per share.  
45 shs Confidence at 40@30 per share.  
35 shs Bullion at 32@31 per share.  
2 shs Belcher at 145 per foot.  
\$3,000 Legal Tender Notes at 74 $\frac{1}{2}$ ¢.

Amount of sales.....\$130,050 00

## Friday, January 25.

15 shs Confidence at 42 $\frac{1}{2}$  per share, h 30.  
10 shs Confidence at 41@40 per share.  
6 shs Confidence at 40 per share, s 10.  
20 shs Bullion at 32@34 per share.  
10 shs Bullion at 35 per share h 10.  
20 shs Chollar-Potosi at 221@220 per foot.  
10 shs Chollar-Potosi at 217 $\frac{1}{2}$ @218 pr ft.  
8 shs Chollar-Potosi at 215 per foot s 30.  
16 shs Chollar-Potosi at 215@214 $\frac{1}{2}$  pr foot.  
9 shs Chollar-Potosi at 214@210 per foot.  
12 shs Gould & Curry at 550 per foot.  
4 shs Savage at 1800 per foot.  
2 shs Savage at 1800 per foot, h 6.  
1 sh Savage at 1800 per foot, s 50.  
2 shs Imperial at 150 per share.  
5 shs Imperial at 148 per share.  
25 shs Ophir at 165 per foot, b 30.  
12 shs Ophir at 157 $\frac{1}{2}$  per foot.  
25 shs Overman at 25 $\frac{1}{2}$  per share.  
10 shs Overman at 25 per share, s 10.  
3 shs Cal Steam Nav Co at 61 per cent.  
12 shs Yellow Jacket at 775@770 per foot.  
25 shs Yellow Jacket at 805@780 per ft b 30.  
1 sh Empire M & M Co at 172 $\frac{1}{2}$  per sh.  
24 shs Savage at 1055@1100 per foot.  
4 shs Savage at 1100 per foot, h 5.  
4 shs Savage at 1102 per foot, h 30.  
4 shs Savage at 1060 per foot, s 30.  
10 shs Cole (Virginia) at 10 per foot.

## AFTERNOON SESSION.

5 shs Chollar-Potosi at 220 per ft b 30.  
25 shs Chollar-Potosi at 214 per foot.  
6 shs Chollar-Potosi at 213 per foot.  
6 shs Chollar-Potosi at 214 per foot.  
10 shs Chollar-Potosi at 212 per foot s 30.  
1 sh Savage at 1815 per foot, b 10.  
2 shs Savage at 1840 per foot.  
1 sh Savage at 1780 per foot, s 30.  
9 shs Savage at 1800 per foot.  
6 shs Yellow Jacket at 800@790 per ft b 30.  
15 shs Yellow Jacket at 800@755 per ft b 30.  
1 sh Yellow Jacket at 790 per foot.  
4 shs Yellow Jacket at 770 per ft s 15.  
1 sh Yellow Jacket at 775 per ft s 10.  
1 sh Yellow Jacket at 730 per foot.  
15 shs Yellow Jacket at 770@760 per foot.  
15 shs Confidence at 42 $\frac{1}{2}$  per share, h 30.  
15 shs Confidence at 40 per share s 10.  
20 shs Confidence at 40 per share, s 30.  
8 shs Crown Point at 1050@1040 per ft, s 3.  
12 shs Crown Point at 1038@1030 per ft s 30.  
4 shs Crown Point at 1140 per foot.  
30 shs Bullion at 32 per share.  
20 shs Bullion at 31 per share.  
6 shs Bullion at 33 per share.  
6 shs Imperial at 149 per share.  
Amount of sales.....\$178,855 00



## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

JOHN STEELE, an "oil prince," who succeeded in 1864 to \$150,000 in cash, and an income of \$2,000 per day, is now penniless. He has "fought the tiger." One hundred thousand dollars of his money is said to have gone into the pocket of Hon. John Morrissey.

PACIFIC HYGIENIC HOME WATER CURE, at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated), B. J. SMITH, M. D., Consulting Physician; R. S. MACRETH, M. D., Attending Physician; W. G. W. HARFORD, Manager; H. ARNOLD, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-14

OLNEY & Co., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Cal. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. 16v13-14

NATURAL CURIOSITIES FOR CHRISTMAS.—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of stuffed Birds, Shell, and Wax Flowers, besides Plants, Birds and Butterflies, for Indian's Toys, Shells, Sea-weeds, etc. 24v13-14

Air Pump for Sale.—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN ROACH, mathematical instrument maker, 522 Montgomery street. 21v13-14

## To Owners of Mineral Cabinets.

A miner in Nevada has a lot of choice Crystals, which he desires to dispose of at reasonable rates to parties who may desire to complete their display of minerals. Address the office of the "Mining and Scientific Press." 19v13-14

## Judicious Resolutions.

Several of our most substantial and judiciously managed mining corporations have passed resolutions, since the approval of the new assessment law, requiring all notice of assessments and sales to be published in the MINING AND SCIENTIFIC PRESS, the only thorough (daily or weekly) mining journal on this coast. Our efforts to concentrate all mining advertisements in one paper, for the economical convenience of shareholders and assessment payers, are meeting with decided success. Those who believe in supporting the mining cause, should bear our paper in mind, and bring up this subject at the next trustee or shareholders' meeting.

San Francisco, April 7th, 1866.

## MINING SHAREHOLDERS' DIRECTORY

(Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.)

Comprising the Names of Companies, District or County of Location; Amount of Assessment; Date of Meeting; Day of Redemption; Sale; and Amount and Time of Payment of Dividends.

NAME AND LOCATION.	AMOUNT OF ASSESSMENT.	DATE OF MEETING.	DAY OF REDEMPTION.	DATE OF SALE.
Arizona Cons. M. Co. \$500.	Feb 15—March 4			
Belcher Co. \$15	Feb 1—Mar 5			
Belcher Co. \$35	Feb 1—Mar 5			
Battle Mountain M. & S. M. Co. \$10.	Feb 15—March 15			
California American G. & S. M. Co. \$2.	Feb 15—March 15			
Calista S. M. Co. \$5.	Jan 15—Feb 15			
Crown Point, dividend.	Payable Jan 15			
Confidence S. M. Co., Storey Co., Nev. div. 10 p. c.	Pay July 9			
Cherokee Star Blue Gravel Co.	Meeting Feb 2			
Crown Point, G. & S. M. Co.	Meeting Feb 11			
Daney G. & S. M. Co.	Feb 25—Mar 15			
Eureka, San Juan, dividend \$1.50 per share.	Payable July—Sept 3			
Empire M. & S. M. Co. dividend.	Payable Jan 12			
Evoca Cons. Copper M. Co. \$250.	Feb 20—March 15			
Forest Springs G. M. Co. \$15.	Jan 14—Jan 30			
George Washington G. & S. M. Co. \$1.50	Feb 9—Feb 25			
Grant Central M. Co. \$1.	Jan 25—Feb 14			
Golden Rule M. Co. \$100.	Payable Jan 8			
Golden Rule M. Co. dividend.	Payable Dec 20			
Old Quarrying Co. \$40.	Jan 11—Jan 23			
Hannam Co. M. Co. \$150.	Jan 22—Feb 8			
La Gravel M. Co. \$1.	Feb 25—March 15			
La Gravel M. Co. \$100.	Payable Jan 15			
Imperial G. & S. M. Co. dividend \$8 sh.	Payable Jan 15			
Independent C. M. Co. dividend.	Payable Sept 1			
I. X. L. G. & S. M. Co. \$1.50.	Feb 15—March 4			
Kohler Bros. S. M. Co.	Meeting Jan 30			
Julia O. & S. M. Co. \$1.	Feb 15—March 6			
Josephine G. M. Co. \$1.	Jan 15—Feb 4			
Johnson G. & S. M. Co. Yuba Co. Div. \$10 sh.	Payable Aug 23			
Keystone M. Co. Calaveras Co. \$10.	Jan 21—Feb 11			
Liberty G. & S. M. Co.	Annual Meeting Feb 4			
La Victoria Copper M. Co.	Meeting Feb 4			
La Blanca G. & S. M. Co. \$1.50.	Jan 15—Jan 31			
London Quartz M. Co. \$30.	Oct 27—Jan 21			
Lady Bell Copper M. Co. \$100.	Feb 14—March 4			
Melones Stanislaus G. & S. M. Co. \$2.	Jan 14—Feb 4			
Mount Tenabo S. M. Co. \$2.	Jan 4—Jan 25			
Monarch G. M. Co. \$1.50.	Jan 25—Feb 15			
Norfolk S. F. H. & R. Ass. \$12.50.	Feb 12—Mar 15			
North Beta Tunnel M. Co. \$50.	Feb 4—Feb 25			
Ophir S. M. Co. \$5.	Feb 11—March 1			
Ophir S. M. Co. \$5.	Jan 15—Feb 15			
Pacific Coal M. Co. \$5.	Dec 24—Jan 21			
Panama and Del Norte S. M. Co. Mex. \$2.	Jan 5—Jan 21			
Panama Coal, Nickel & Cobalt M. Co.	Meeting Jan 23			
Patterson G. & S. M. Co. \$1.	Feb 5—Feb 25			
Patterson G. & S. M. Co.	Meeting Jan 25			
Siskiyou M. Co. \$5.	Jan 21—Feb 25			
South Cruz F. O. W. \$50.	Jan 5—Jan 25			
San Francisco City and County Bonds, \$5, 1855.	80 95			
San Francisco City and County Bonds, \$5, 1856.	71 73			
San Francisco City and County Bonds, \$5, 1857.	71 73			
San Francisco City and County Bonds, \$5, 1858.	80 84			
San Francisco City and County Bonds, \$5, 1859.	80 84			
San Francisco City and County Bonds, \$5, 1860.	80 84			
San Francisco City and County Bonds, \$5, 1861.	80 84			
San Francisco City and County Bonds, \$5, 1862.	80 84			
San Francisco City and County Bonds, \$5, 1863.	80 84			
San Francisco City and County Bonds, \$5, 1864.	80 84			
San Francisco City and County Bonds, \$5, 1865.	80 84			
San Francisco City and County Bonds, \$5, 1866.	80 84			
San Francisco City and County Bonds, \$5, 1867.	80 84			
San Francisco City and County Bonds, \$5, 1868.	80 84			
San Francisco City and County Bonds, \$5, 1869.	80 84			
San Francisco City and County Bonds, \$5, 1870.	80 84			
San Francisco City and County Bonds, \$5, 1871.	80 84			
San Francisco City and County Bonds, \$5, 1872.	80 84			
San Francisco City and County Bonds, \$5, 1873.	80 84			
San Francisco City and County Bonds, \$5, 1874.	80 84			
San Francisco City and County Bonds, \$5, 1875.	80 84			
San Francisco City and County Bonds, \$5, 1876.	80 84			
San Francisco City and County Bonds, \$5, 1877.	80 84			
San Francisco City and County Bonds, \$5, 1878.	80 84			
San Francisco City and County Bonds, \$5, 1879.	80 84			
San Francisco City and County Bonds, \$5, 1880.	80 84			
San Francisco City and County Bonds, \$5, 1881.	80 84			
San Francisco City and County Bonds, \$5, 1882.	80 84			
San Francisco City and County Bonds, \$5, 1883.	80 84			
San Francisco City and County Bonds, \$5, 1884.	80 84			
San Francisco City and County Bonds, \$5, 1885.	80 84			
San Francisco City and County Bonds, \$5, 1886.	80 84			
San Francisco City and County Bonds, \$5, 1887.	80 84			
San Francisco City and County Bonds, \$5, 1888.	80 84			
San Francisco City and County Bonds, \$5, 1889.	80 84			
San Francisco City and County Bonds, \$5, 1890.	80 84			
San Francisco City and County Bonds, \$5, 1891.	80 84			
San Francisco City and County Bonds, \$5, 1892.	80 84			
San Francisco City and County Bonds, \$5, 1893.	80 84			
San Francisco City and County Bonds, \$5, 1894.	80 84			
San Francisco City and County Bonds, \$5, 1895.	80 84			
San Francisco City and County Bonds, \$5, 1896.	80 84			
San Francisco City and County Bonds, \$5, 1897.	80 84			
San Francisco City and County Bonds, \$5, 1898.	80 84			
San Francisco City and County Bonds, \$5, 1899.	80 84			
San Francisco City and County Bonds, \$5, 1900.	80 84			

\*Those marked with an asterisk (\*) are advertised in this Journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	
FRIDAY EVENING, JANUARY 25, 1867.	
MISCELLANEOUS.	Gold.
United States 7-30ths Bonds, June issue.	7 78
Legal Tender Notes.	74 7/8
California State Bonds, 7s, 1857.	100 102
San Francisco City Bonds, 5s, 1855.	80 95
San Francisco City and County Bonds, 5s, 1856.	71 73
San Francisco City and County Bonds, 5s, 1857.	71 73
San Francisco City and County Bonds, 5s, 1858.	80 84
San Francisco City and County Bonds, 5s, 1859.	80 84
San Francisco City and County Bonds, 5s, 1860.	80 84
San Francisco City and County Bonds, 5s, 1861.	80 84
San Francisco City and County Bonds, 5s, 1862.	80 84
San Francisco City and County Bonds, 5s, 1863.	80 84
San Francisco City and County Bonds, 5s, 1864.	80 84
San Francisco City and County Bonds, 5s, 1865.	80 84
San Francisco City and County Bonds, 5s, 1866.	80 84
San Francisco City and County Bonds, 5s, 1867.	80 84
San Francisco City and County Bonds, 5s, 1868.	80 84
San Francisco City and County Bonds, 5s, 1869.	80 84
San Francisco City and County Bonds, 5s, 1870.	80 84
San Francisco City and County Bonds, 5s, 1871.	80 84
San Francisco City and County Bonds, 5s, 1872.	80 84
San Francisco City and County Bonds, 5s, 1873.	80 84
San Francisco City and County Bonds, 5s, 1874.	80 84
San Francisco City and County Bonds, 5s, 1875.	80 84
San Francisco City and County Bonds, 5s, 1876.	80 84
San Francisco City and County Bonds, 5s, 1877.	80 84
San Francisco City and County Bonds, 5s, 1878.	80 84
San Francisco City and County Bonds, 5s, 1879.	80 84
San Francisco City and County Bonds, 5s, 1880.	80 84
San Francisco City and County Bonds, 5s, 1881.	80 84
San Francisco City and County Bonds, 5s, 1882.	80 84
San Francisco City and County Bonds, 5s, 1883.	80 84
San Francisco City and County Bonds, 5s, 1884.	80 84
San Francisco City and County Bonds, 5s, 1885.	80 84
San Francisco City and County Bonds, 5s, 1886.	80 84
San Francisco City and County Bonds, 5s, 1887.	80 84
San Francisco City and County Bonds, 5s, 1888.	80 84
San Francisco City and County Bonds, 5s, 1889.	80 84
San Francisco City and County Bonds, 5s, 1890.	80 84
San Francisco City and County Bonds, 5s, 1891.	80 84
San Francisco City and County Bonds, 5s, 1892.	80 84
San Francisco City and County Bonds, 5s, 1893.	80 84
San Francisco City and County Bonds, 5s, 1894.	80 84
San Francisco City and County Bonds, 5s, 1895.	80 84
San Francisco City and County Bonds, 5s, 1896.	80 84
San Francisco City and County Bonds, 5s, 1897.	80 84
San Francisco City and County Bonds, 5s, 1898.	80 84
San Francisco City and County Bonds, 5s, 1899.	80 84
San Francisco City and County Bonds, 5s, 1900.	80 84

## San Francisco Market Rates.

Wholesale Prices.	
FRIDAY, JANUARY 25, 1867.	
Flour, Extra, per bbl.	\$5 75 @ \$5 50
Do, Superfine.	4 75 @ 5 25
Do, No. 1.	4 50 @ 5 00
Wheat, per 100 lbs.	1 50 @ 1 85
Oats, per 100 lbs.	1 15 @ 1 30
Barley, per 100 lbs.	83 @ 85
Onions, per 100 lbs.	2 50 @ 3 00
Potatoes, per 100 lbs.	50 @ 1 25
Hay, per ton.	8 00 @ 10 00
Live Oak Wood, per cord.	5 00 @ 6 00
Beef, extra, dressed, per lb.	10 @ 12
Sheep, on foot.	3 00 @ 3 50
Hogs, on foot.	6 @ 6 50
Hogs, dressed, per lb.	8 @ 10

GROCERIES, ETC.	
Sugar, crushed, per lb.	9 @ 13 1/2
Do, China.	9 @ 10
Coffee, Costa Rica, per lb.	22 @ 23
Do, Rio.	22 @ 22 1/2
Tea, Japan, per lb.	85 @ 85
Do, Green.	60 @ 1 25
Hawaiian Rice, per lb.	9 @ 9
Indian Rice, per lb.	6 1/2 @ 7
Conchall, per lb.	60 @ 60
Candles, per lb.	16 @ 23
Ranch Butter, per lb.	30 @ 35
Indian Butter, per lb.	25 @ 35
Cheese, California, per lb.	10 @ 10
Eggs, per dozen.	30 @ 35
Lard, per lb.	12 1/2 @ 14
Ham and Bacon, per lb.	12 1/2 @ 15
Shoulders, per lb.	12 1/2 @ 15

## Valuable Books on Mining, Mineralogy, Geology, Metallurgy, Etc.

ANSTED'S Gold Seekers Manual. 1 vol. 12mo. cloth.	\$ 1 75
ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous Substances, capable of supplying Burning Fluids. By Thomas Antsell, M. D. 1 vol. 8vo.	3 00
BUCKLAND (Rev. Wm.).—Geology and Mineralogy. 2 vols. 8vo. cloth.	10 00
CONGDON.—Mining Laws and Forms of California and Nevada, and the Mining Ordinances of Mexico. 1st ed. 8vo; 2nd ed. 1866. (The only compilation extant.)	2 50
DUFRENOY.—Mineralogie. 5 volumes, 8vo.	20 00
DANA'S Manual of Mineralogy. Revised edition. 200 illustrations. 12mo. cloth. New Haven, 1863. School Edition.	2 25
DANA'S Manual of Geology. Numerous Illustrations. 8vo. half morocco. Philadelphia, 1863.	6 75
DANA'S Text-Book of Geology. Illustrated. 12mo. cloth. Philadelphia, 1864.	2 25
ELDERHORST'S Blowpipe.—Analysis and Determination of Minerals. Third edition, revised. 8vo. cloth. Philadelphia, 1866.	1 50
FAIRBAIRN.—Iron: its History, properties, and Processes of Manufacture. By Wm. Fairbairn, C. E., LL. D. 1 vol. 8vo. New Edition.	4 00
FEUTCHVANGER.—A Treatise on Gems. 1 vol. 8vo. cloth.	1 75
GOODYEAR'S Translation. A Treatise on the Assaying of Copper, Silver, Lead, Gold and Mercury, from the German of Th. Bodenart and Bruno Kerl. 1 vol. 12mo. cloth.	2 50
HUMBLE.—Dictionary of Geology and Mineralogy. Third Edition, Revised 1 vol. 8vo. cloth.	9 00
HOSKOLD'S Practical Treatise on Mining. Land and Railway Surveying, Engineering, Etc. 1 vol. 8vo. cloth.	16 00
KUSTEL.—Nevada and California Processes of Silver and Gold Extraction, for general use, and especially for the Mining Public of California and Nevada; also, the Chemical, Metallurgical and Mineralogical Processes. By Guido Kustel, Mining Engineer. Illustrated by accurate engraving. 1 vol. 8vo. cloth.	5 00
LAMBORN.—Rudimentary Treatise on the Metallurgy of Copper. 1 vol. 12mo. limp cloth. Illustrated.	1 00
LAMBORN.—Rudimentary Treatise on the Metallurgy of Silver and Lead. 1 vol. 12mo. limp cloth. Illustrated.	1 00
MITCHELL'S Manual of Practical Assaying. 1 vol. 8vo. cloth.	10 50
MAKINS.—A Manual of Metallurgy, more particularly of the Precious Metals, including the Methods of Assaying them. By G. H. Makins. 1 vol. 12mo. cloth. Illustrated by upwards of 50 engravings.	3 50
OVERMAN (Fred.).—A Treatise on Metallurgy: comprising Mining, and General and Particular Metallurgical Operations. 1 vol. 8vo. cloth.	7 50
PIGGOT.—The Chemistry and Metallurgy of Copper. By A. Snowdon Piggot, M. D. 1 vol. 12mo. cloth.	2 00
PHILLIPS AND DARLINGTON.—Records of Mining and Metallurgy, or, Facts and Memoranda for the Use of Mine Agents and Smelters. By J. A. Phillips and John Darlington. 1 vol. 12mo. cloth.	4 00
PERCY (John).—Metallurgy: the Art of Extracting Metals from their Ores, and adapting them to various uses in the Manufacture of Iron and Steel. 1 vol. 8vo. cloth.	15 50
PLATTNER AND MUSPRATT on the Use of the Blowpipe. 47 Diagrams. Third edition, revised. 8vo. cloth. London, 1854.	6 00
Practical Use of the Blowpipe; being a Graduated Course of Analysis. 12mo. cloth. New York, 1858.	2 00
SCOFFERN'S Useful Metals and their Alloys. 1 vol. cloth.	5 50
SMITH'S Blowpipe.—Vade-Mecum. The Blowpipe. Characters of Minerals Alphabetically Arranged. 8vo. cloth. London, 1862.	1 75
URE'S Dictionary of Arts, Manufactures, and Mines. 2,300 Engravings. From last London edition. 3 vols. 8vo. cloth. New York.	16 50
WHITNEY.—A Geological Survey of California. Report of Field Work from 1860 to 1864. By J. D. Whitney. 1 vol. 8vo. cloth.	3 75
WHEELER & RANDALL'S Quartz Operator's Handbook. Flexible cloth, 12mo. San Francisco 1865.	1 00

Any of the above Books will be furnished by return mail or express, on receipt of the price with postage added. Any other books desired will also be furnished at the lowest San Francisco retail prices. Address,

DEWEY & Co.,  
Mining and Scientific Press Office, San Francisco.  
14v13-14m

American and Foreign Patents.—Letters Patent for inventors can be secured in the United States and foreign countries through the Mining and Scientific Press Patent Agency. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## Metallurgy.

## Pacific Chemical Works.

## FALKENAU & HANKS,

Desire to call the attention of Druggists, Manufacturers, Metallurgists, Millmen, Assayers, Chemists and Students, to their

## ANALYTICAL LABORATORY,

And Establishment for the manufacture of Pure Reagents,

## Pharmaceutical Preparations,

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## Analyses and Assays,

Of every description, and to give advice upon all matters pertaining to Technical Chemistry.

Office, 620 Washington street; Laboratory, Corner of 3v14-1f  
Center and Folsom streets.

## HENRY PICKEL,

## CIVIL AND MINING ENGINEER,

No. 111 South Sixteenth street. Philadelphia, Penn.  
Occidental Hotel, and No. 711 Mission street,  
25v13-1m SAN FRANCISCO, CAL.</



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner* of January 12th: The ore of the Constitution lode, now being opened by the Active company, is improving perceptibly as depth is attained. Now, at only ten feet in depth, native copper is plentiful, and the black sulphurets of copper and silver may be seen in little veins throughout the mass.

The last working of Morning Star ore was, we learn, a success every way... Capt. Swinerton, now in the Atlantic States, writes that all but six thousand dollars of the stock of the company that had the lease of the mine of the Buckeye No. 1, was taken, and they expected soon to send orders to commence operations.

Mr. Arnold tested the black ore from the Leviathan, by pulverizing and roasting. From eight ounces, he got one ounce of amalgam.

The Monitor Consolidated Mining Company, of this place, have now at their works a crusher and two pulverizers, from Whelpley & Storer's in Boston, and it is their intention, we understand, now that the proof is not wanting that our ores need roasting, and can be readily amalgamated after roasting, to purchase the right to erect one of these furnaces and put their mill in operation at an early day.

From same of 19th: Some very fine quartz was struck in the James Barrett Tunnel on Thursday of this week, in the shape of small feeders or spurs about an inch thick, bearing ore of the best character. This, together with the fact that the influx of water is becoming every day greater, is an encouraging sign. The present contract of fifty feet will be finished next week.

The contractor on the Mowyer tunnel has turned to the left for the purpose of cutting the lode which they have been for some time running along side of.

Three parties here, having in charge respectively the Mowyer, Tarshish and James Barrett tunnels, have each received word from Eastern correspondents that they would soon be placed in funds to commence operations on other claims in the vicinity.

## Amador County.

From the *Ledger* of January 19th: On Monday last, Mr. R. C. Downs disposed of two half shares—one-tenth each—in the Railroad mine, situated at Sutter Creek, for the sum of seven thousand dollars, cash. Since the sale, the same interests could not be purchased for less than six thousand dollars each, and would be cheap at that.

Letter to same, from Volcano, January 17th: Mining does not furnish much of a topic to write about at this time. The weather has been too much broken to allow the placer miner to do much, and the ground is so soft that the quartz men cannot transport rock to advantage.

## Calaveras County.

From the *Chronicle* of January 19th: Mr. George Wilson has lately discovered a very handsome quartz lode, on the foot of Ragtown Hill, which seems to be well defined, and shows about two feet thick on top. It has a good deal of iron sulphurets, and shows some fine gold to the naked eye.... Saturday, Messrs. Gratacap, Gamble & Co. cleaned up, at Hepburn & Co.'s new mill, at Railroad, near one thousand dollars from fifty tons of quartz taken from their Spruce Gulch lead. This was the first quartz crushed in the mill, and its yield speaks well both for the mill and mine.

Correspondence of the San Andreas Register of January 19th: The owners of the Whisky Slide claim have suspended work for some time in their mine, but are shortly going to sink still further on their lode. There is no necessity to cut across to determine its thickness, as it is now upwards of twenty feet wide. A number of assays have been taken, and the results, even with the inferior rock, in every instance has proved most flattering.

Letter from Murphy's to the Columbia Citizen, dated January 13th: The quartz mines in this vicinity are proving as good as the most sanguine could expect.

Dan McCay and Co.'s lode is looking finely; they are down about 70 feet and at that depth the lead is two and a half feet wide and prospects finely. The Collateral, owned by Morse, Green & Co., are down some fifteen feet, the lead is two feet wide, and well sprinkled with the precious metal. Four pounds of rock, crushed in a hand mortar, yielded \$3.25. It is quite certain they have one of the best lodes in the county. Woods & Co., on Indian Creek, are still getting out some fine rock.

## El Dorado County.

From the Placerville Courier of Jan 19th: Leon and others, owning the North American lead, northeast of town, are sinking a shaft, and are now down about fifteen feet. The mixture of porphyry, quartz and dirt which they have taken out has yielded a rich prospect to every pan, from the surface down, and rock has been found showing free gold in liberal quantities. They contemplate erecting an astra.

Three of the owners of the claim on the great porphyry lead, have sold out their interests therein for twelve hundred dollars to parties from Gold Hill.

The Blue Lead Cement Company at Smith's Flat, cleaned up last week, after a run of two weeks, \$1,000.

The Manning quartz property has, we understand, passed into the hands of an Eastern company. The shaft is sunk to a depth of 130 feet, showing a wide ledge with a free sprinkling of gold dispersed throughout the quartz.

Mitchell, Emery & Towne of San Francisco, have purchased the old Tucker claim on Little Spanish Hill. They are using sixty inches of water, with a pressure of two hundred and ten feet, running off an immense quantity of surface dirt, and have already made a fine opening. They have ten to fifteen feet of pay gravel, with an area of fifteen acres, which they intend to work. Two other companies are erecting hydraulic apparatus on Big Spanish Hill.

Kelsey correspondent of the Democrat, says: "Look out for some tall strikes in this township the coming spring. The rich strike in the Woodside & Shanklin claim has excited our usually quiet people, and started them to prospecting. Not a few of our old, quiet residents have 'quartz on the brain.' I am not sorry, for I believe the result will be the discovery and development of a number of claims in our neighborhood. In early days this township was noted for its rich placer diggings, and it seems to me it must follow as a natural consequence that rich quartz veins must be in the vicinity of rich surface diggings. We entertain this belief and are prospecting on the strength of it. A number of claims have been located and work done on most of them—sufficient to hold them, but the rock has not been tested.

Letter from Latrobe to the Amador Ledger of Jan. 19th: The new diggings lately struck near this place caused considerable excitement in the neighborhood, but everything is now quiet, owing to the fact that the parties who first discovered the diggings, near Drigan's had some misunderstanding about the division of the gold, but that has been arranged and they were to commence operations again to-day. In another claim, discovered by Mr. G. Taylor, they have been at work on a ditch, and expect to be taking out the ore in a few days. They think they can make from \$8 to \$10 per day to the haul. In both of these claims the gold is found in decomposed quartz.

## Kern County.

From the Havilah Courier of January 12th: The Joe Walker mine is in the Quito Mining district, about ten miles southeast of Havilah. A few days after its location, in March, 1866, it was sold for \$2,000. The purchasers, after sinking fourteen feet upon it, disposed of one-third of it to E. B. Burke for twelve thousand five hundred dollars. From that time to this the work upon the mine has been prosecuted with energy and vigor, and at the present time the main shaft is down to the depth of one hundred and twenty feet. The company have a 20-stamp mill.

The amount of quartz crushed to date has been about twelve hundred tons, which has yielded the sum of forty-three thousand dollars. The average yield of the rock is thirty-five dollars per ton—the lowest yield being twenty-five dollars and the highest fifty dollars per ton. The quartz taken from the vein is all worked in the mill, and no selection or separation of rock is ever made. At the present time there is a sufficient quantity of pay rock in sight to keep the company at work for a year to come.

Several new lodes have been discovered in the Quito district which prospect well, and may in time prove as rich as the Joe Walker.

## Nevada County.

From the Gazette of January 19th: The Eagle company of Hartford are now down 250 feet on the incline of the California ledge, and have drifted fifty feet north and one hundred and sixty feet south. All the rock taken out in the drifts will pay, and some of it is very rich. The new mill is now ready for work, with the exception of five Bradford's shaking tables, which will be finished in a few days. The mill has ten stamps of eight hundred pounds each. The work on the Grizzly ledge, in Eureka township, belonging to the same company, is being carried on night and day. They have

a four-foot ledge, and the rock looks well. They made one crushing in the mill, the rock yielding some eighteen dollars a ton.

From the Transcript of January 19th: The Banner mine is now thoroughly opened, and the workmen are taking out rock at the rate of twenty-five tons per day. The large mill at the mine is kept in constant operation, and, besides, Stiles' mill is also constantly supplied with rock. The Stiles mill is now being repaired, and we understand that the French mill will be employed on the quartz.

The Grass Valley National of January 18th says: A friend of ours was on Woodpecker Ravine, on Wednesday, looking for nuggets, and was so fortunate as to find one weighing about thirty dollars.

EXCELSIOR.—From the Nevada Gazette of January 21st: We were shown, yesterday, some very rich specimens from the ledge of the Golden Eagle company, at Meadow Lake. The ledge, at the place they are now working, is four feet in width, and the part containing the rich rock shown us is two feet in width. There are no sulphurets in the rock, the gold being free and evenly disseminated through the rock. The company have built a new 5-stamp mill since the winter commenced, the machinery having been hauled in on sleds over the snow. They have seventy-five tons of rock out, and will commence crushing on Monday next.

The Transcript of 22d says: Marshal Jeffrey, of Meadow Lake, arrived in this city on Sunday morning. He informs us the snow is about ten feet deep on a level, and the traveling, except on snow shoes, is rough. Business at Meadow Lake is dull and money is scarce, but the mines are looking first rate.

The Mohawk and Montreal company are getting out quartz all the time. The machinery for the mill is out on the road, and they are making every effort to get it in.

The U. S. Grant is running day and night, and the rock is paying from forty to sixty dollars per ton.

The Golden Eagle company have out a large amount of rock which it is estimated will yield \$150 to the ton. They have just completed a 5-stamp mill which they expect to start up to-day.

The California company are working a double shift, and are sinking on the ledge for the purpose of getting it thoroughly opened.

Thirty pounds of Golden Eagle rock yielded \$10.30 when pounded in a mortar. The reduction works are expected to be completed in three weeks. This mill is built by a joint stock company of citizens, and is said to be the finest mill in the district. It is to be a custom mill, and will afford a good opportunity for prospectors.

## Placer County.

From the Herald of January 19th: Capt. Mallet is now busily engaged in erecting his mill on the Badger Ravine Cement Claim. Some of the cement in this claim prospects as high as 60 cents to the pan. A tunnel has been run into the claim about 400 feet.

We learn that the mill on the St. Lawrence ledge, near Ophir, was completed within a very few days of the time set by Mr. Roberts, the superintendent, in spite of certain unforeseen delays. It was started up on the 11th inst., and worked to a charm. The battery has six stamps of 650 pounds each. A "hurdy-gurdy" wheel, eight feet in diameter, driven by water brought for a distance of some 850 feet in iron pipe, is the motor. The cams are placed upon the wheel shaft, and there is but a single one to each stamp. The battery will crush ten tons per day. A conveniently arranged and substantial building protects the works. The unusually wet season, however, will oblige the company to erect pumping apparatus or to discontinue operations for a time. The main shaft, now down some 90 feet, has been partially filled by surface water, rendering it necessary to stop for the present, so far as mining is concerned.

## Plumas County.

From the National of January 12th: We are indebted to a correspondent from Taylorville for the following items:

Wm. Vaubuskirk has bought one-half of the Buchanan ledge in Indian Valley, and intends to erect a mill upon it.

Work will be commenced upon the Premin again in a few days.

From the Quincy Union of January 19th: We learn that the Spanish Rauch water ditch was badly damaged by the recent storm. At numerous places, where the ditch crossed ravines, it is nearly all washed away. It is very doubtful whether it will be repaired again, as it would cost not less than \$2,000 to put it in good condition. The mines on Shores' and Badger hill are supplied with water from this ditch, and, as a matter of course, they will be valueless unless the ditch is repaired.

The Cosmopolitan Co., at Genesee Valley,

resumed work upon their tunnel on Monday, and intend to keep at it until they strike something.

L. Sanders & Co. are at work in Mulroony's old claims on Soda Bar, and are making big wages.

## Sacramento County.

The Folsom Telegraph of January 19th says: The miners are doing well in and about this vicinity. We hear of rich strikes in all directions.

## Shasta County.

From the Courier of January 12th: The miners about Lower Springs are doing well this winter. So far the season has been quite favorable for working such diggings. Nuggets of considerable size are frequently found, and most of the gulches and flats pay very regularly. Last week N. C. Sweetzer found an ounce slug, and another miner working just above him found a piece weighing thirteen dollars.

The Whisky Creek flume is to be rebuilt on an improved plan. It will in future be safe against floods.

Last week, in speaking of an assay of rock from the Pacific claim, we said the result was \$228 in gold. It should have read \$828.73.

E. A. Kelton will soon commence work on the second extension of the Red Warrior claim.

From same of 19th: In South Fork district, the Chicago tunnel is in a distance of 200 feet, and the shaft down over 60 feet. Work is continued on this claim day and night, and some fine looking rock is being taken from the shaft for shipment. The Confidence and the Montgomery have each shafts sunk upon their lodes to the depth of 10 feet. The Ohio shaft is down 25 feet, and the Crystal has one sunk to the depth of 40 feet. The Pacific tunnel is in 140 feet, and taps the lode 100 feet below the surface. The lode is about 13 inches wide, and prospects very rich. A tunnel has been run in the Dayton 25 feet, and one of the Crystal extensions has a shaft down 14 feet. A little work has been done on the Red Warrior, but the storm drove the workmen out, and operations have been suspended until more settled weather.

Capt. Kidd prepared and set off a blast in his claim, near Centerville, a short time since, which did good execution. The bank of the claim is over twenty feet deep. A small drift was run back from the face of the bank about twenty feet, a number of kegs of powder deposited therein, and the drift closely packed and tamped. When all was ready the Captain set fire to the fuse, and in a few minutes thereafter an explosion took place which fairly pulverized the bank for a considerable space in every direction. Four days' sluicing were required to run the gravel thus loosened through a large sized flume.

## Sierra County.

La Porte correspondence of the Downieville Messenger of Jan. 19th, says: Times are brisk here now for the miners, as everybody is at work. Water is running in every ditch, pipe and hose, and we see, even now, buckets of amalgam going into Conly's for assay and safe keeping. Mr. Kleckner, of Port Wine, told me yesterday that he had seen \$10,000 for circulation in that little town.

A correspondent of the Alta, writing from Goodyear's Bar, has the following: The Blue Gravel range has been tapped in a new place by the Magnolia Company, whose ground has been located upon the dividing ridge between the north and middle branches of the Yuba river. The tunnel of the company is distant about two miles from this place in a southerly direction. It is now in 1,200 feet, and the prospects good.

## Siskiyou County.

From the Yreka Union of Jan. 12th: Mr. Washington Bailey, who resides on Lower Soda Creek, Shasta county, informs us that the miners in that vicinity have had better success this season than for several years past.

## Tuolumne County.

From the Columbia Citizen of Jan. 19th: Mining operations have once again been started. Haines & Co., after blasting through huge limestone bowlders, have reached with their flume the rich diggings that lay beneath Main street. They will have to run their flume many hundred feet before they reach their own diggings. Mauchester, Keith & Co. are busy hydraulic with two pipes, the lots at the foot of Main and Washington streets, where stood, a few months ago, a large block of brick buildings, which were sold to this enterprising company, who pulled them down and disposed of the brick.

Mr. James Farrell found a piece of pure gold weighing ten ounces, while moving a pile of tailings on Main Gulch, in that city, one day last week.



## Yuba County.

From the *Marvsville Appeal* of Jan. 20th: We continue to hear good reports from the Bateman quartz claim, located in the Indian district. Mr. Bateman caused twelve tons to be crushed last week at Templar No. 2's mill, which yielded at the rate of \$20 per ton from the plates and battery—the Chile mill not being cleaned up. As the Chile mill yielded about equally with the plates and battery at a former crushing, it is believed this rock paid \$30 or over to the ton. This crushing, too, did not include the extra rich rock. The best is sorted out and sacked.

From the *North Californian* of Jan. 16th: The Buckeye mill, which has been stopped for repairs several days, commenced operations again to-day.

Same of 21st: The Babbelaim at Timbuc-too, last week, as the result of a twenty days' run, cleaned up \$8,000. Their claim is finely opened and its owners expect to take out \$10,000 a month hereafter.

## ARIZONA.

From the *La Paz Gazette* of Jan. 3d: From Wickenburg we hear favorable reports of the operation of the Vulture Company, who keep their small mill running steadily and successfully.

The smelting furnaces put up on the Mineral Hill copper mines, Williams Fork, by Messrs. Knowles & Coffin, have gone into operation, and are reported to be a great success.

The *Los Angeles News* says: A new mining district north of the Tehuero and East Soledad district has been formed. Gold bearing quartz of great richness has been discovered in the new district. The leads average from four to eight feet in width. Four large arastras will be in operation in a few days. A water wheel, sixty feet in diameter, has been erected for the purpose of driving a 20-stamp mill. The leads discovered are so situated that a tunnel of six hundred feet on the lead will be one thousand feet from the surface.

## BRITISH COLUMBIA.

A private letter from the Big Bend mines, of late date, addressed to Dr. Shiel, has favorable news in relation to the mines. Messrs. Cain & Co., and Mountain & Co., on French creek, are reported to have struck a big thing. The Robinson tunnel, also on French creek, is working well. These are all that are being worked to advantage.

## IDAHO.

A letter from Greenville to the *Montana Post* of Dec. 29th, says: We believe this will be the best mining camp in the Rocky Mountains next season. There is a large number of from twelve to sixteen dollar diggings, with some that will pay better. New diggings are being struck every week, and among the latest may be mentioned Montana Bar and Knapps' Creek, with good paying prospects. We think it is safe to say that this camp will average fifteen dollars per day to the man. There are about five hundred men wintering in the basin, and more are coming all the time. All are busy; some rocking, some prospecting, but the most are engaged in building on speculation on their town lots.

From the *Owyhee Avalanche* of Jan. 12th: The Shoenbar mill, has been running steadily for three weeks, with a fair prospect of continuing profitably without further interruption. Fifty tons of Silver Cord rock was first worked—the amalgamating being done by Mr. Shoenbar with satisfactory results. Early this week the mill started on Whisky Gulch ore. We are informed by Mr. Agnew that he has a contract by which he is to receive ten tons daily from this mine. This will ensure the steady running of the mill.

Letter to the *Alt* from Rocky Bar, Alturas county, dated Jan. 5th, says: But two quartz mills have run this winter—the Waddingham mill, in charge of Jno. Green, and the Idaho mill, by the company resident—both with great success. A large lot of machinery has been sent into the Yuba district, and more is on the way. We learn that Colonel John O'Neal, of Stockton, is having a 20-stamp mill ready to bring in the spring. His interest in the North Star, and in the Sophia Tracy, will give him all it can do. These ledges are five and eight feet wide, and assay \$300 per ton. Fifty dollars is here considered good paying rock.

At Red Warrior, one and one-half miles distant, scarcely anything has been done this winter. The Victor Company has a sheriff in charge of their mill, until their quarrel with their superintendent is arranged. The New York and Idaho mill has its superintendent at New York city, stirring up the company, or getting stirred up, I don't know which. The Wide West mill, with one of the best ledges in the Territory, is also idle. The tunnel of Messrs. Wulff & Biven will not be worked again until April.

## MONTANA.

From the *Post* of Dec. 29th: We learn from the *Herald* that Judge Turnley has taken from the Park lode nearly 1,000 tons of ore, which has yielded about \$30 per ton. The cost of extracting the same was only \$3 per ton.

A merchant of this city, who has just returned from a flying visit to Highland, informs us that Mr. Mansfield took from his claim below the town, during the previous week, the very convenient amount of \$6,000. Six laborers are engaged in drifting and appear to have started on a road that is paved with gold. A quartz ledge of wonderful richness has been discovered at the head of the aniferous gulch.

Mr. Geo. Atkin, who is acting in behalf of the Brooklyn Gold Mining Company, has purchased a 12-stamp mill of Mr. Hendrie. On the 24th inst., the machinery was transported to the "George Atkin Lode," which was recently discovered near Meadow Creek. A few cabins have been constructed, and the workmen have given the place the name of Atkinville. Over 100 tons of ore have been extracted, and unless something unforeseen occurs, golden results may be looked for before the "ices of March." The Wyck-off process will be thoroughly tested.

One of the largest clean-ups which has ever been made in this Territory, (or, we may add, in any other, from the same amount of rock,) was made last Monday, in Judge Turnley's 10-stamp mill, crushing ore from the Whitlatch Union lode. The mill crushed ninety tons of rock, and the amount of bullion will be close on to \$12,000.

## NEVADA.

## Humboldt.

From the *Register* of Jan. 12th: Mr. Fall showed us, yesterday, 420 ounces of crude bullion from the Pioneer mill, the result of three and a half tons unsorted rock from the Essex. This rock was milled as taken out—all between casings—and the bullion is judged, by those experienced in the business, to be worth a dollar an ounce in silver, and is known to contain a small amount of gold.

From same of December 29th: Mr. White, one of the discoverers of the Golconda ledge, informs us that the ledge is  $3\frac{1}{2}$  feet in width, and very soft—a dark-green looking ore, which in pulp looks black as ink. It is so soft that two men take out five tons daily. Holt, of the Winnemucca mill, agreed to haul and work a ton of the rock. He did so, and paid them \$80, after deducting for hauling and milling. But a small opening has been made—an open cut of about fifteen feet. From this has been taken what is estimated at forty-five tons first class. The whole body of the ledge is worked, after separating into the two classes. Holt has been running his mill on it for some weeks. The first class yields \$117 in bullion 995.5 fine. It is easy to crush, and is worked by the simplest chemicals. A contract has been let for an incline of fifty feet on the ledge, taking out four by five feet of the rock. This ledge is in the second East range, about twelve miles in a direction slightly south of east from Holt's mill, though by wagon it is twenty-three miles.

Teams are hauling continually to Holt's mill, and rock could be taken out, apparently, to employ all the mills in the county. The Golconda ledge crops plainly through a distance of about a mile and a half. Mining, hauling and working cost \$12.50 the ton.

## Reese River.

From the *Reveille* of Jan. 11th: We paid a visit, the other day, to the Manhattan mill. Although its arrangements are extremely faulty, it is managed well. The Gardiner crusher is a decided improvement. It dispenses with the labor of four men.

From same of 12th: The North Star, one of the mines of the Manhattan Company, is opened by a vertical shaft, which has reached the depth of 325 feet. The first level was run at the depth of 180 feet. One hundred feet below this, a level is now being run, and has been pushed in to the eastward 145 feet, and will be made to follow the vein to its eastern boundary. Yesterday morning the workmen penetrated a chimney of beautiful ore, which had been cut in the upper level. A handsome specimen of dark ruby silver from this chimney will go to the Paris Exposition. The rock is at present easily worked.

Same of 14th says business is overdone at Belmont, and supplies as cheap as at Anstin.

From same of January 15th: Yesterday afternoon Colonel Buel returned from Silver Bend, with upwards of 7,000 ounces of bullion from his mill at Belmont. A much larger amount was looked for, but it appears that a heavy fall of snow had blocked up the roads, and prevented the hauling of ore and wood.

## Washoe.

[In the Stock Circular, in another portion

of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Jan. 16th: The new incline of the Plato Company, Gold Hill, is now down about ninety-five feet, and is being pushed rapidly forward, day and night, by three shifts of men. It is being run by contract at \$7.50 per foot, and is to be 150 feet deep. It is being well timbered, and has a double track the whole length.

From same of 18th: The Bonner shaft of the Gould & Curry Company is now about 750 feet deep, the sinking of it being recommenced a week ago last Monday, after a cessation of nearly a year. Three shifts of men—six men to a shift—are pushing forward the work with great energy. The hoisting and pumping machinery is of sufficient capacity to allow of sinking to the depth of 1,300 feet or more. The fifth level of the mine is now being opened, and the future prospects of the company are very flattering. The shaft of the Imperial and Empire companies has now attained the depth of 750 feet. The present machinery will carry it to the depth of nearly or quite 1,000 feet. The Curtis shaft of the Savage Company is now about 450 feet deep, sinking being recommenced last Monday, after having been discontinued for a year. The hoisting and pumping machinery used is the most powerful for the purpose in the State, the largest engine being a beam engine of 250-horse power. It works in the most perfect manner. The Chollar-Potosi new shaft is 700 feet deep. The shaft of the Bullion Company is also 700 feet. The Ophir-Mexican shaft is about 620 feet. A tenth level is being opened, sixty feet below the ninth, or lowest.

Same of 19th: The suit of Thomas Farrell vs. the Savage Mining Company, which was commenced two or three weeks ago, claiming as a front ledge 600 feet of the rich ground now being worked at the lower level of the Savage claim, running north from the north line of the Hale & Norcross, and \$500,000 damages, came to an abrupt close yesterday in the District Court, the suit being dismissed on motion of plaintiff, at his own costs.

From the *Virginia Union* of Jan. 14th: A few weeks ago, Fred, Black and Mr. Spittle, of this city, discovered a quartz ledge eight miles north of here, on which they sunk a shaft about eight feet deep, at which depth they obtained rock that contained native silver plainly visible to the naked eye. An assay of the ore yielded \$76 in silver and \$25 in gold per ton.

Same of 11th: Yesterday morning about five o'clock, a large cave occurred in the north end of the old works of the Yellow Jacket mine, next to the Burke and Hamilton ground. It was sixty feet long and about forty wide. The ground had been worked to within some twenty-five feet of the surface, and in ten places the timbers can be seen below, through crevices made by the cave. The men on the night shift had gone off but a few minutes before, and the day shift had not gone to work, so, fortunately, no one was hurt. Part of the caved ground was worked by outside parties on contract, and the other part by the company.

From the *Gold Hill News* of Jan. 16th: The Sierra Nevada Co. are engaged in taking out the machinery of their old works and removing them to a point some 300 or 400 feet east, where a shaft has been sunk to a depth of 518 feet, from the bottom of which a drift has been run east a distance of 150 feet. The large engine is in position, and within six weeks will be ready to start up.

## Black Rock.

The *Chico Courier* of a recent date says in regard to this district: Ton after ton of the rock has been worked by mill process, and the silver bricks produced are the best test of the richness of the ore. The ore has yielded from \$100 to \$700 per ton, when correctly worked by those who understand the process. The Chico company has not been idle, and some of their tests, on account of their high authority, are probably the best and most correct of any that have been made. We are informed that specimens sent to Mr. Martin, on his first trip to Black Rock, were forwarded to General Bidwell, at Washington, who is a member of the Chico Mining company, and were by him taken to Europe and fully tested by the best metallurgists and mineralogists, and those tests proved the ore rich beyond their most extravagant ideas; and what is of more value, that the ore can be worked by mill process cheaper than ordinary quartz. The company is to be organized on a more permanent basis, and will open the spring campaign with a 24-stamp mill, with an experienced superintendent, who has proven himself competent to work the ore successfully. The mill will be located in the High

Rock or Chico district. We are informed that the Mineralogical Institute at Freiberg, Germany, has made propositions through General Bidwell for an interest in the company.

From the *Susanville Sage Brush*: We have just been shown by Mr. John S. Ward, a linton of pure silver and gold, weighing one-fourth of an ounce, which he took from six ounces of Snow Storm ore by amalgamation. He informs us that he used a new agent in amalgamating the rock, which, by the way, is one of the most common substances in the country. The figures show that calling the linton all silver (and there is evidently a large proportion of it gold), the rock to work \$1,200 per ton. Mr. Ward worked this rock by common amalgamating process.

## WASHINGTON.

From the *Walla Walla Statesman* of the 11th January: Within the last week information has reached here from reliable sources, that a party of Frenchmen have discovered rich diggings on a creek, distant about forty miles from Colville. This creek is a tributary of the Pen d'Oreille, is estimated to be thirty miles long, and will afford claims for a large number of miners. At last accounts, working with snow on ground, and with no other convenience than pans, they were taking out from fifteen to twenty dollars to the hand. The parties who made the discovery had come into Colville for supplies, and paid for the same in dust taken from the new mines. The excitement in Colville Valley in relation to these new mines was intense, and large numbers of persons had gone out to secure claims. As soon as the news reached Walla Walla, a party was made up and forthwith started for the mines.

## The California Wool Crop for 1866.

The annual Wool Circular of Messrs. McLennan, Whelan & Grisar, of this city, contains some very interesting statistics and facts with regard to the wool growing interest of this State. We compile as follows:

The total receipts at this city for the year 1866 was 8,377,287 pounds, including 443,200 pounds from Oregon, worth about one and a half million of dollars. The amount exported has been 6,549,931 for 1865, against 4,662,120 for 1866. The home consumption having been 3,189,500 in 1866, against 2,350,000 for 1865.

One of the most encouraging facts connected with the business, is the decided improvement in the quality of this year's crop over any preceding one. The wool was healthy, well put up, and hotter conditioned than ever before, and, according to a "Boston Circular," compared favorably with the western wool. The wools were divided for export into six grades, which in 1865, read as follows: 1st grade,  $1\frac{1}{4}$  of the total amount of import; 2d do. 15%; 3d do. 48%; 4th do. 13; 5th do. 16%; 6th do. 4%. The reading for 1866 is 4, 25, 50, 12, 8, 1=100.

The Oregon wool has been mostly taken up to supply the local manufactories. The prospects for the next spring clip opens very favorably, the heavy rains being an advantage both in the production of feed and for cleansing the wool upon sheep-back.

It remains with the sheep growers themselves to maintain the good name already acquired for our California wools, and for still further advancing its reputation. Additional care may be advantageously employed.

The statistics of the wool, hide and tallow business are given for the past ten years. The warehouse of Messrs. McLennan, Whelan & Grisar, having become the Wool Exchange of California, where most of the sales are effected, that circumstance, in connection with the increase of their business of storing and grading wools, has rendered it necessary that they should add two additional stores to their already extensive buildings, which fact, of itself, speaks well for the prosperity in this important and growing branch of industry.

ONE MILLION and a half of dollars, in silver, was taken annually from the Valenciana mine, in Gnanajuato, Mexico, from 1768 to 1788. For twenty years afterward the yield was over a million per year.



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

G. W. M. SMITH. W. B. EWER. A. T. DEWEY.  
**DEWEY & CO., Publishers.**

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the MINING AND SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office. SAN FRANCISCO, Jan 11th, 1866.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

Mr. S. D. Whitaker, is our authorized Traveling Agent and Solicitor from this date. Jan. 1, 1867.

## San Francisco:

Saturday Morning, Jan. 26, 1867.

## NOTICES TO CORRESPONDENTS.

H. S.—ANTIOCH.—The history of coke dates as far back as the middle of the seventeenth century, as is evidenced by the following quotation: "There is a sort of fewel made by charking or calcining Newcastle coals, which burns without smook, without fouling the furniture, and altogether as sweet, and is much more lasting and profitable than wood or charcoal; it kindles suddenly, and is useful either for chambers, roasting of meat, drying of malt or hops, woolcombing, distilling, preserving, or any such like employment. His Highness the Lord Protector, with the advice of his Council, have encouraged and authorized the making thereof in order to the preservation of the woods of the nation. If any shall desire to make tryal for any of the use aforesaid, which will cost little or nothing, the experiment, they may repair to London at Northumberland Wharf, near Chearing Cross; and according to the satisfaction they receive therein, they may be supplied from time to time with what quantity they shall have occasion to use. Those that have made tryal of it, finde it very profitable to all those uses abovementioned. It is also very useful for the tobacco pipe burners."—*Public Intelligence*, No. 139, from Monday, August 16, to Monday, August 23, 1658, p. 764. This advertisement appears also in the succeeding number for August 30, but apparently not in any of the previous numbers. The first improvement in the manufacture of coke was made towards the end of the ensuing century by Earl Dundonald, father of the hero of the Quiberon Bay, but otherwise better known as Lord Cochrane, in common with the struggle for independence by the South American States. Earl Dundonald foreshadowed many recent improvements, although his first attempts were commercially failures. In fact he greatly impaired his estate in consequence of the money which he lost in the undertaking.

S. P.—COPPEROPOLIS.—The first steam engine erected in England was put up at the *Huel*, or as it is now commonly spelled and pronounced, *Wheal Vor*, a celebrated tin mine in the parish of Breage, which was at work from 1710 to 1714. Whether this engine was one of Savary's or Newcomen's, is doubtful. As, however, Newcomen's engine was not much known before 1712, and subsequently came into general use in Cornish mines, and after the introduction of Watts' improved engines, about 1770, it was known as the *old atmospheric engine*; it is probable that Savary's was the one employed.

J. Y.—AUBURN.—Gunpowder was first employed in England for mining purposes, at the Ecton copper mine in Staffordshire, about the year 1670. It had been used previously in Germany for the like purpose.

THE NATIONAL MINING LAW.—A Washington telegram dated January 24th, informs us that Commissioner Wilson, of the General Land Office, has at last issued instructions to the Registers, Receivers and Surveyors-General to acquaint themselves with the local mining customs and usages of the respective districts, with a view to the carrying into effect the law in regard to mining claims, which was passed at the last session.

## NATIVE LEAD.

In our issue of two weeks since, page 19, in noticing the occurrence of native lead associated with gold, in Australia, we stated that we were not aware of any similar occurrence on this coast. During the past week, however, our attention has been called to page 38 in Kustel's "Nevada and California Processes of Gold and Silver Extraction," where the occurrence of this mineral in the Comstock lode is fully noticed, as will be seen below. Native lead is a mineral of very rare occurrence, and is mentioned by Dana as being found "in thin plates and small globules." The only localities of such occurrence mentioned by him, are "in globules in galena at Alston Moor; in lava, in Madeira, Rathke; at the mines near Carthage, in Spain; in carboniferous limestone near Bristol, and at Kenman, in Ireland; \* \* and in red oxide of lead, near a basaltic dyke in Ireland."

Under certain artificial circumstances, lead crystallizes in regular octahedrons. In this form it is sometimes found in the masonry of smelting furnaces, or in the hearth mass of cupelling furnaces. In nature, however, it is only found, as above, in small grains or thin laminae. It was not found until recently in Australia, as noticed in the Press two weeks since, combined with gold.

In 1861 native lead was found in the silver ore of the Comstock lode (Ophir), Nevada, alloyed with silver, gold and copper, in very variable proportions. It consists of silver 60 to 85; lead, 8 to 30; gold, 1.9; copper 1 to 5 per cent. H=2.7—3. Gr.=10.6—11.3. [See California and Nevada Processes of Gold and Silver Extraction, page 38.] Some specimens were sent to the Mining Academy in Freiberg, and examined by that most distinguished mineralogist, Professor Breithaupt, who gives a description of this mineral in his "Mineralogical Studies," (Berg und Huettenmaennische, Zeitung, May, 1866, page 169, under the name of *Kustelite*, as follows:

"The specimens have the size of very small beans, of a silver-white color, a little darker than native silver; (on a fresh surface) the fracture is hackly. It is perfectly malleable. Impressions with a knife are easier made than on native silver. H=2.25—2.75. Gr. variable,=11.3—13.1. According to Mr. Kustel, who discovered and examined this mineral, it chiefly consists of silver with lead and gold. Prof. Richter analyzed one of the specimens and confirmed the above composition. In Siberia, similar grains of native lead were found very rarely in the gold washings; but there was partially a doubt as to their natural origin. The appearance of the *Kustelite*, however, seems to speak for the possibility of a natural alloy of silver and gold with lead."

Professor Breithaupt was under the impression that the *Kustelite* was found in the "Ophir gold washings." In such a case, a suspicion might be entertained that a lump of an artificial compound from an old smelting furnace, or from some other source, might have been lost, and in time, amongst the gravel, parted in small fragments; but as this mineral occurs in the Comstock lode, there cannot be the slightest doubt that the combination of lead, silver and gold has been produced by natural agents.

ASSAYERS' MATERIALS AND CHEMISTS' WARE.—A fine assortment of everything in the way of assayers' materials, miscellaneous chemicals, chemical ware and photographic stock, may always be found at the establishment of John Taylor & Co., 512 and 514 Washington street. Messrs. Taylor & Co. having long been engaged in this business, and having extensive European correspondence, are well prepared to meet the varied and constantly increasing wants connected with the development of the mineral wealth of this coast.

COMMUNICATIONS RECEIVED.—"Earthquake Phenomena," by D. V.; "The Value of Pans in Working Auriferous Quartz," by Quartz Prospector.

## ORANMER'S MACHINE GUN.

T. J. Craumer's machine gun or battery is now on exhibition in this city. It is said to be capable of delivering 300 musket balls per minute, with all the force and accuracy that an ordinary musket is capable of. All that is necessary, after taking aim, is to turn a crank, and keep on turning placing a cap on a revolving table for each discharge. A public exhibition of the battery was made on Thursday afternoon, at Liddle's gunsmith shop on Washington street, on which occasion ninety shots were discharged in fifteen seconds, which, at a distance of twenty-seven yards, perforated an inch board—the shots from each barrel striking in nearly the same spot every time. The machine, with its supports, weighs only 150 pounds. The guns employed are short rifle barrels—three only are employed in this machine; but the principle admits of quite an increase over that number. This formidable weapon consists first, of a wrought iron cylinder, ten inches in diameter, revolving upon its axis. This cylinder is pierced upon its circumference with eighty-four holes, arranged in rows of three each, parallel with its axis. The holes are so many chambers, which are successively brought before the three rifle barrels already described. A nipple is attached to each chamber, which, by an ingenious contrivance of ratchets, etc., are presented to a succession of caps, which have to be placed by hand in position on a revolving table, near the center of the machine, as the firing progresses. The powder is placed in a kind of hopper on the top of the machine, while the balls are placed in a similar hopper by the side of the former. On turning a crank, each series of chambers are in succession filled with a graduated quantity of powder, which is immediately covered with balls, and are lightly rammed by the same motion that places them in position. The caps are next placed upon the nipples, and exploded as they come opposite the barrels.

The entire machine works on a pivot, and can be readily pointed in any desirable direction. There seems to be no difficulty in operating the machine, which is simple in construction and easily handled. Three or four of such batteries could hardly fail to do immense injury in an enemy's ranks.

NEW MACHINERY.—The Golden State Iron Works are now making extensive hoisting works for the Bellingham Bay Coal company, and a 10-stamp mill for the Guadalupe and Sacramento company, Sinaloa, Mexico. The latter have ordered two of Hendy's new concentrators. We also noticed one of Hanscom's large size quartz crushers on the move at these works.

The Aetna Iron Works are quite busy. They have, among others, orders for a 15-stamp mill for G. V. Clark, Calaveras county; four of Wheeler & Randall's new pattern concentrators; ten of Dr. Hill's 5-foot pans for the Gentry mill, Washoe; Hessey's new amalgamator (just finished); iron front and other work for the new market to be erected on Pine street, between Kearny and Montgomery, by Messrs. Tevis & Davis. A superior sample of house front work, by Messrs. Hanscom & Co., can be seen on the Fireman's Fund Insurance company's building, corner Sansome and California streets.

PARIS EXPOSITION.—The California contributions to the Paris Exhibition went forward on the steamer of the 19th. From Panama they will go by the French steam line. Among them were the cabinet of minerals, and the splendid assortment of Mission woolen goods. The committee became personally responsible for the freight.

THE Colorado Salt works are in full operation. They are at South Park. The company, says the *Denver News*, will furnish salt of very fine quality, in that place, at seven cents per pound, or  $4\frac{1}{2}$  cents at the works.

## THE SACRED FIRES OF THE ANCIENTS.

Burning springs, as they were formerly called, have been found in about all parts of the globe. The Persians and Greeks regarded them as sacred fires kept up by the especial agencies of their divinities. They often built temples over them. Baku, on the Caspian Sea, was one of the sacred cities of the Persian fire worshippers; the whole neighborhood abounding in burning springs. The most extensive of these springs is known by the name of the "Perpetual Fire." It has been an object of great veneration from the earliest times, and its fires, which still burn, are said never to have been extinguished.

The fires upon the altar of the Grecian temple of Aegina were kept burning for many centuries, by means, as modern investigation has shown, of one of these burning springs. These fires were sometimes suffered to go out, and, as mentioned by both Plutarch and Strabo (of this and other sacred fires), when so extinguished, they were re-lighted by invisible means. The ruins of the temple of Aegina were carefully examined by an English traveler, a few years ago, when the following developments were made. Under the place where the altar stood was found a round hole about thirteen inches in diameter, in a block of stone. This circular orifice opens into a square one, which passes down through solid stone to a depth of several feet. The lower extremity of the square hole communicates with a cavity in which a fire is supposed to have been constantly kept burning, so that the flame did not appear above the surface of the fissure. Nothing more would be necessary, when it was desired to produce a fire upon the altar, than to pour oil upon the same, which, communicating with the flame below, would set fire to the sacrifice upon the altar, as it were, in a miraculous manner; or by leading the gas jet a few inches higher, a perpetual fire might be kept up.

The Chinese refer to a spring which they say continued to burn constantly for eleven hundred years—from the second to the thirteenth century. It is only quite recently that the true origin of these phenomena has been understood. In pursuing investigations to determine the cause, they were first referred to coal; some, doubtless, may have had such an origin, but the more recent borings for petroleum have pretty conclusively shown that they should be chiefly referred to the oil strata, and that they are fed from the volatile constituents of this modern illuminating agent.

TO OUR NEIGHBORS.—We return our sincere thanks for the numerous editorial expressions of approbation and good-will which our exchanges have of late contained. Since we donned our new dress, compliments have been showered upon us. The *Dutch Flat Enquirer*, the *North Californian*, the *Amador Ledger*, the *Downieville Messenger*, the *Marysville Appeal*, the *Alpine Miner*, the *Owyhee Avalanche*, the *Reese River Reveille*, the *Esmeralda Union*, the *Times* of this city, the *Evangel*, the *Sacramento Bee*, and the *Placerville Courier*, have each said something gratifying to our "love of approbation" bump. Our space will not permit us to copy all the notices, but we append the last named as an example.

MINING AND SCIENTIFIC PRESS.—With the issue of Saturday last, this journal entered upon its fourteenth volume, and its general appearance is sufficient proof that it is in a flourishing condition, as it deserves to be—for it is filled to overflowing from week to week with interesting and instructive reading matter. To the miner, especially, it is as well worth the price of subscription as any public journal on this coast. The first number of the present volume is printed on type made in San Francisco—the first of the kind ever used.—*Placerville Cour.* Jan. 12th.

A WHALE got caught between the screw and the frame of the U. S. Propeller Mohican, the other day, and stopped the movement of the engines.



**AGRICULTURAL STATISTICS.**—Secretary Hoag, of the State Agricultural Society, appears to be a live man in his place. His efforts, and those of his associates, in the management of the State Society, are well directed and energetic for the advancement of our agricultural interests. The State Board of Agriculture has addressed a circular to the people of several counties, urging the importance of a system of organization and co-operative effort, and more diligence in the collection and discrimination of statistics, by which our farmers may be put in possession of seasonable and correct information with regard to the productions of the State, and the condition of its markets, as well as the productions and market rates of other sections and countries. The possession of such information is indispensable to intelligent, profitable farming. The National and some of the State Governments have initiated a policy of this kind, which is proving of inestimable value. In no portion of the Union can such information be made more serviceable than in California. The rapid advance which this State is making in her agricultural productions, renders it of the highest importance that that portion of our domestic industry should be stimulated and guided by an intelligent and comprehensive policy. When proper arrangements have been made for gathering the desired statistics, the Secretary of the State Board proposes to issue a monthly circular, which shall contain all said information carefully tabulated, advance sheets of which will be furnished the press for general publication.

**THE LATEST STEAMBOAT IMPROVEMENT.**—Mr. William Morrissey, of this city, has invented what he calls an improvement in steam vessels, which may be described as follows: The wheels are placed in pairs, one upon either extremity of shafts, as arranged upon such boats as work both wheels upon one shaft. Two or more pairs of wheels can be arranged upon each side of the boat, and, if desirable, one before and another abaft the boat. These latter wheels can be placed in adjustable slots, so as to act as steering wheels, by varying their angles with the direction of the boat, in the same manner as an ordinary rudder is worked. Such an arrangement may also make the boat a double-ended, thus avoiding all necessity for turning round.

The wheels, instead of being made in the ordinary manner, have their floats placed upon the circumference of water-tight cylinders, which, by their buoyancy, admit of a boat so propelled being run in very shallow water, or in narrow streams, for which description of navigation this improvement is intended. Application for letters patent for the above has been made through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

**NEVADA AT PARIS.**—The *Reveille* says that Nevada will be splendidly represented at the Paris Exposition. Some tons of rich and beautiful ore will be forwarded. A full representation of the whole country from the Humboldt to the Colorado is designed. Maps, sketches and photographs of prominent objects of interest will also be provided. The wealthy companies will bear the expense of forwarding their own contributions. Public-spirited gentlemen will represent the State, paying their own expenses. All classes will be called upon to contribute something toward paying other expenses that may accrue. In the Nevada Legislature, a House Bill was passed on the 24th, appointing D. E. Buell and J. F. Lockhardt, Commissioners.

**ROSS BROWNE'S REPORT.**—A telegram dated January 24th, says: The report of Ross Browne, with 5,000 extra copies, was ordered printed yesterday.

A FOUR THOUSAND horse-power steam engine will do the pumping to supply the Great Exposition building with water.

**ANOTHER PETROLEUM REFINING COMPANY.** An association, to be known as the "Pioneer Petroleum Refining Company," has filed articles of incorporation, with a capital stock of \$50,000; Charles Stott, David Hunter and Chas. H. Wakelee, constitute the first Board of Trustees. Their principal place of business will be in this city. This company proposes to conduct the business of refining petroleum, on a principle quite new, or at least differing very materially from any process now in use on this coast. Steam is their chief heating agent employed, and is applied directly to the body of the crude oil itself, and gradually increased in temperature and pressure, as the oils to be driven off become more and more heavy. It is claimed that by this process the oil comes from the still ready for use, requiring no subsequent refining or working, either by acids or any other agent, thereby greatly reducing the cost of the process. If this principle succeeds, it must result in a very material cheapening of the price of coal oil.

**CRANBERRIES.**—New Jersey people are devoting much attention to the culture of this crop. Wherever there is a piece of land that is good for nothing else, it is planted with cranberries. Certain bogs have yielded at the rate of 220 bushels to the acre, worth about \$1,250! Two brothers Budd purchased a cedar swamp five years ago, for \$10 per acre. They set out cranberries. Last year they received \$7,200 for the produce of twenty-eight acres of it. They have been offered \$600 per acre for the whole tract. Thousands of acres in Michigan are being turned to this use. One man, a Mr. Bruner, has commenced work with \$100,000 capital, all of which he proposes to invest in the business of cranberry raising. One advantage which this crop has, is that the bushes never need replanting, but will last for all time with scarcely any care.

**CASTOR BEAN.**—An acre of land in eastor beans, will yield \$40 on the average. The oil is worth \$1.50 per gallon. But one great difficulty in the business is that the seeds do not all ripen at the same time. Many are lost by the popping open of the pods, for it will not pay to gather them up. The *Marysville Appeal* says: "Some plan has got to be adopted to remedy this evil before eastor bean growing can be made very profitable. Who will invent a machine to gather these seeds? Or who will devise some plan to stop the popping of the buds? The stalks may be cut as soon as the first pods ripen, but will the unripe beans ripen, and will green beans make good oil? These are questions which arise, and must be decided by experiment. The crop will be largely experimented upon next summer."

THE NEWS from Ottawa, Canada West, December 15th, is as follows: The Commissioner of Crown Lands has received from the Inspector of the Madoc gold region, rich specimens of gold, in quartz and sand. Inspector reports mining carried on in five concessions in Madoc, and the four concessions of Huntington. From one lot between \$1,000 and \$1,500 have been taken out. Gold was first struck at a depth of twenty feet. From the specimens of quartz seen, the Inspector is of opinion that gold exists through the townships of Rawdon, Madoc, and Ellisever, and portions of Marmora and Tudor. Three thousand persons visited the mining regions last month.

THIRTY-EIGHT years ago, an Indian woman rode on horse-back from Los Angeles to Santa Barbara, using a piece of grape-vine as a switch. On reaching her destination, she stuck her switch into the ground. It took root, and sixty barrels of wine were made last season from its fruit.

THE SOLDIERS' MONUMENT, of Boston, is to consist of an obelisk 120 feet high, and will be built of Concord granite. It will be surrounded by an appropriate figure and placed on Flagstaff Hill.

THE *Vedette* of January 3d, says that it is reported that a party of nine miners started about a month ago from Pahranaagat, on a prospecting tour towards the Colorado river, endeavoring to strike a point below St. George. They were in search of copper. When about fifty miles from Callville they were attacked by a band of Indians, supposed to be Navajoes, and the entire party slain.

Since the above was in type, we have received the *Vedette* of the 12th, from which we clip the following: "We are pleased to announce that the party of nine miners, who were supposed to have been murdered by the Indians on their road from Pahranaagat to the Colorado, have returned in safety. They were attacked, but retreated without the loss of a man. Mr. Rosenbaum, who arrived in the southern stage last evening from Pahranaagat, is our informant. Mr. R. confirms the good report, recently received, of the plentiful yield of the precious metal in that section of the country."

THE UNION COMPANY'S CLAIM.—It is said that the Union and Consummes lodes in El Dorado county, mentioned in our last issue, as recently sold to a New York company for \$1,200,000, are like the the Harpending or Banker mine in Placer county—immense vein-like masses of friable rock, easily mined and easily worked.

A QUARTZ MILL FOR NOTHING.—The *Placer Herald* says that one of the proprietors of the Miner's Foundry, San Francisco, recently visited Auburn, and offered to put up a mill on any ledge which would pay \$20 per ton, run it until it paid for itself, and then turn it over to the company owning the mine.

SILVER IN NEW YORK.—Otis Marsh, of Alleghany county, is said to have found a rich vein of this metal on his farm. At the depth of forty feet he found native silver in a bluish quartz. A New York assayer pronounces the ore worth \$1,500 per ton. There was considerable excitement, and the lands in the vicinity have suddenly risen in value ten-fold. So says the *Angelica Reporter's* correspondent.

THE Gold Hill *News* says that sixteen millions of dollars was lost in that vicinity in 1866, owing to imperfect methods of working silver ore; and urges the propriety of offering, by Legislative Act, large inducements to inventors and scientific men to direct their attention to this point.

A REVERSIBLE BOOT HEEL is the last hit of some Yankee genius. When worn down a hair's breadth or so on one side, it can be turned and worn down on the other, and so *ad libitum*. A patent has been applied for.

BORN.—In this city, January 11th, a son to C. W. M. SMITH, one of the proprietors of this journal.

### Subscribe at Once!

From the commencement of Volume XIV of the MINING AND SCIENTIFIC PRESS, only a limited number of copies will be saved for files by us; consequently those who desire the paper for future as well as present value, should subscribe at once.

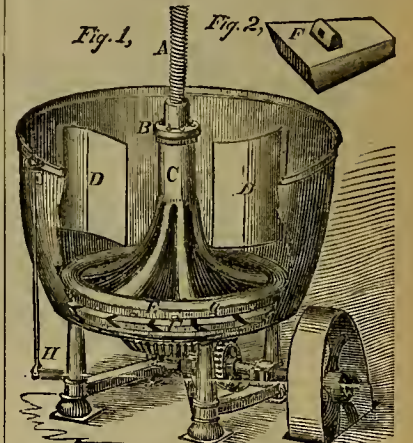
### Generous Compliments.

The following is a sample of the generous acknowledgments which we frequently receive. We can only return thanks for such gentlemanly obligations, and assure our friends of our best endeavors to merit their respect and kindness: GROCERTOWN, January 22, '67. MESSRS. DEWEY & Co.—Sirs: I have the honor to acknowledge receipt of your letter of the 21st instant, transmitting to me "Ladies' Patent" on my application through you for an "Improved Machine for Washing Ore." It came to hand safely, and I am pleased to tender you my grateful acknowledgments for your success on my behalf. Very truly yours, M. A. WOODSIDE.

**OIL! OIL!! OIL!!!**  
—OUR—  
**MACHINERY OIL**  
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**Dell, Granna & Co.,**  
511 1-2 and 513 Front street, San Francisco  
IMPORTERS OF  
**COAL OILS AND LAMP STOCK.**  
21v12-3m9p

A CALCULATION, recently made by a correspondent of the *London Mining Journal*, gives these figures: British railways, including preference shares, mortgage loans, etc., pay on the average, 3½ per cent.; the 350 mines in the Mining Share List, including copper, lead and tin, 13½ per cent. This shows an advantage of 10 per cent. on investments in sound mining adventures.

### STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



### Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the divs.  
Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

### A Review of the Year 1866!

Containing an elaborate Resume of the  
**MINING OPERATIONS**  
OF THE ENTIRE PACIFIC COAST,  
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Of this City and State, and other Statistical information pertaining to Agriculture, Manufactures, etc. Also, articles on Banks and Local Insurance Companies; Mining Stocks; Treasure Product; Merchandise and

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Will be ready for transmission East by the next Steamer.  
**Single Copies, - - - - - 75 Cents.**  
**Ten Copies, and over, - - - 50 Cents.**

Compiled from the "Mercantile Gazette and Prices Current" of January 9th, 1867.  
**BY JOHN H. CARMANY,**  
Editor of the San Francisco Weekly Stock Circular.  
3v14-11

**A. S. Hallidie & Co.,**  
MANUFACTURERS OF  
**FLAT & ROUND WIRE ROPE,**  
For Mining, Shipping, Ferry,  
AND GENERAL PURPOSES.

Office—412 Clay street. . . . . Works—North Beach.

**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer these interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.  
We manufacture of all sizes, and in any length—  
**Round Wire Rope—Iron or Steel, for Hoisting.**  
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**Soft Steel Wire Rope—For Derrick Fall Ropes—**very strong and durable—one-third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

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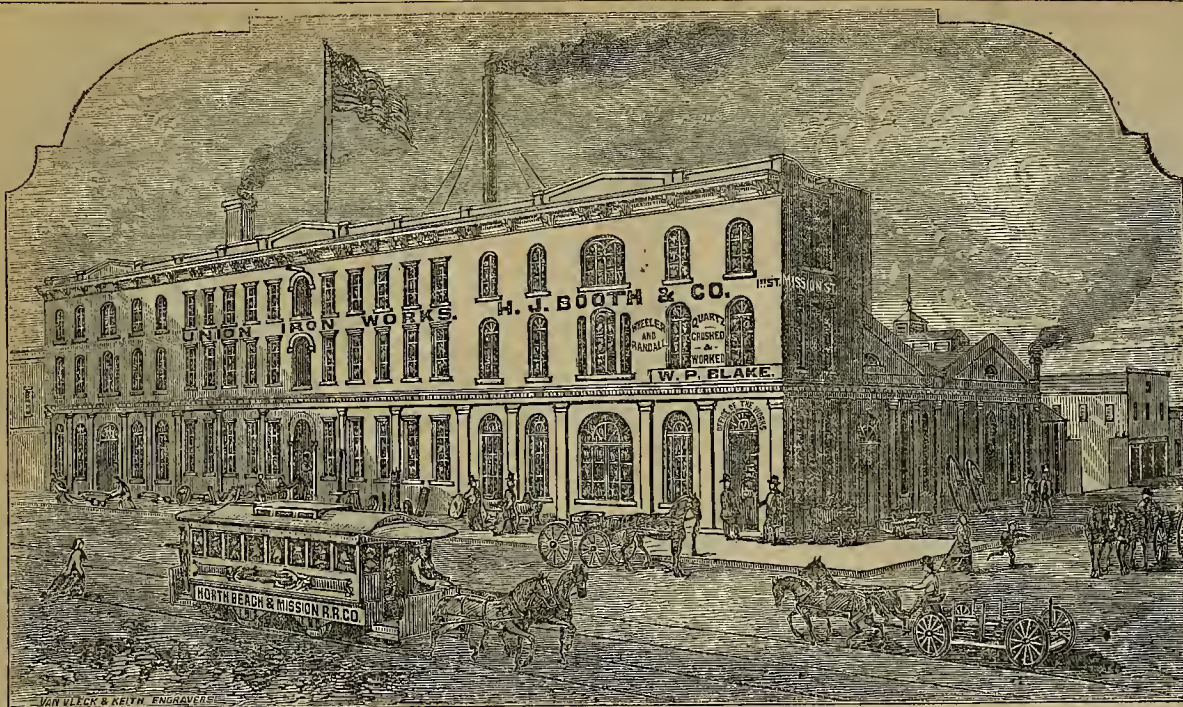
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Cir. cunf.	Wt pr 100 ft.	Cir. cunf.	Wt pr 100 ft.	Cir. cunf.	Wt pr 100 ft.	Size Link.	Wt pr 100 ft.	Br'k'n Str'n.	Wt'g Load.
2	53	1½	33	5	100	½	266	7	2,300
2	83	2	55	6	139	¾	341	11	3,700
3½	170	2½	91	8	236	1	533	19	6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6m9p





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps, Mill Sectors of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. H. J. BOOTH'S PATENT QUARTZ CRUSHERS, of all sizes.

**ENGINES.** Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable On-off Regulator—best in use. W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.** The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenus Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Printer's concentrators, Wakley's pans, Bisco's pan, German Barrels, Astra Centring Chle Mills. Sectors of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. H. J. BOOTH'S PATENT QUARTZ CRUSHERS, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russell Iron Sectors, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

H. J. BOOTH &amp; CO.

## Machinists and Foundries.

PALMER, KNOX &amp; CO.,

## Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street, SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

## MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing.

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER &amp; RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN &amp; PETERSON'S

AMALGAMATOR AND SEPARATOR, Tyler's Improved Water Wheel.

Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

KNOX'S AMALGAMATORS,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either Gold or Silver Ores.

Genuine White Iron Stamp Shoes and Dies Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

## WILLAMETTE IRON WORKS, PORTLAND, OREGON.

Steam Engines, Boilers,

SAW AND CRIST MILLS,

MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-First and E streets,

18v13-ly One block north of Couch's Wharf.

## UNION IRON WORKS, Sacramento.

WILLIAMS, ROOT &amp; NELSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS, And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston Packing, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 SACRAMENTO CITY

## JOHN WRIGHT, Pick Manufacturer,

No. 229 Fremont street, between Howard and Folsom, SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining. Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction.

19v13-ly

## GEORGE T. PRACY, MACHINE WORKS,

Nos 109 and 111 Mission street, between Main and Spear, SAN FRANCISCO.

STEAM ENGINE, FLOUR AND SAW MILL

And Quartz Machinery, Printing Presses,

—AND—

MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24v12

T. G. DURNING.

J. E. FISHER.

## PACIFIC FILE FACTORY

No. 53 Beale Street,

Between Market and Mission streets, San Francisco.

FILES RECUT AND WARRANTED AS GOOD AS NEW, or no charge. The only establishment in the State. We also manufacture Reapers and Mower Sections.

8v13-ly DURNING &amp; FISHER, Prop'rs.

## SAN FRANCISCO

## Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets,

Manufacturers of

Marine and Stationary Engines

Quartz Machinery, Saw, Flour and Sugar Mills, Mining

Pumps, Hoisting Gear, Agricultural implements, etc.

—ALSO—

Wine, Cider, Cotton and Tobacco Presses

of the latest Improved Patterns.

## STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston Packing, requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

MACHINERY OF ALL DESCRIPTIONS

Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-ly

DEVON, DINSMORE &amp; CO

## GLOBE

## Foundry and Machine Shop,

STOCKTON, CAL.

MANUFACTURERS OF

Quartz, Saw and Grist Mill Irons, Steam

Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited

13v13-ly and promptly executed.

LEWIS COFFEY.

J. S. RISON.

LEWIS COFFEY &amp; RISON,

Steam Boiler &amp; Sheet Iron Works.

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler

Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality.

Old Stand, corner of Bush and Market streets, opposite

Oriental Hotel, San Francisco.

## HANSKOM &amp; CO., 17 FENDERGAST, H. S. SMITH. (W. W. HANSKOM.)

## Aetna Iron Works!

Southeast corner Fremont and Tehama streets, SAN FRANCISCO.

Practical Machinists and Iron Founders,

MANUFACTURE

## STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

HANSKOM'S CRUSHER.

The best of the kind now in use in this State or anywhere else

Wheeler &amp; Randall's New Grinder and

Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use

Sent for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or the money will be refunded.

Sole makers for this coast of the "Fendergast

White Iron Stamp Shoes, and Dies.

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings

and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.

19v12

## FULTON

## Foundry and Iron Works.

## HINCKLEY &amp; CO.,

MANUFACTURERS OF

## STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco.

3-4y

## NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets, SAN FRANCISCO.

MARINE,

Locomotive,

And all kinds of

HIGH PRESSURE

Steam Boilers

MADE

All Boilers guaranteed and

tested by U. S. Boiler In-

spector before sent out of the

Shop, at Shop expense.

All kinds of Sheet Iron and

Water Pipe, Coal Oil

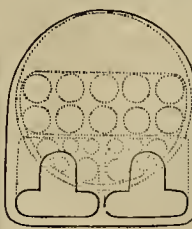
Stills, Wrought Iron

Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired

P. CAMERON.



6v12-ly

A SUBTERRANEAN RIVER.—"Dan de Quille," in a letter from Downieville to the Territorial Enterprise, speaks of a number of "large circular sinks" in the bed of a ravine in Sierra county. He says:

Some have mistaken them for the craters of extinct volcanoes, but they are evidently formed by the settling down of the gravel in the cañon into the caverns of the rock below. In one of these sinks a party of miners once sunk a shaft to the depth of eighty feet without finding the bottom. At the time of my visit a new hole had broken out below the large ones I have mentioned. The hole was circular, and its sides as smooth as though dug by man. It was about fifteen feet deep, with a passage about the size of a common tunnel leading from the bottom. Being alone and without a rope or caudle, I could only look at this curious 'hole in the ground' from the surface. Afterwards a party was made up to go with ropes and a proper outfit to explore the cavern, but a storm prevented our going. Judging from the immense quantities of earth that must have been sucked into the ground, there must be a vast cavern or range of caverns underneath. As the gravel which has been swallowed up is all rich in gold, who knows but there may be a subterranean stream there whose bed is paved with gold? The lime belt strikes westerly to Brithes' Ranch, where burst forth a number of springs, affording from two to four hundred inches of water. Many think that these springs are the outlet of the caverns.

**RAILROAD RULES.**—The following rules are based upon legal decisions, and ought to be universally known. The courts have decided that applicants for tickets on railroads can be ejected from the cars if they do not offer the exact amount of their fare. Conductors are not bound to make change. All railroad tickets are good until used, conditions "good for this day only" are of no account. Passengers who lose their tickets can be ejected from the cars unless they purchase a second one. Passengers are bound to observe decorum in the cars, and are obliged to comply with all reasonable demands to show their tickets. Standing on the platform or otherwise violating the rules of the company, renders a person liable to be put off the train. No person has a right to monopolize more seats than he has paid for; and any article left in the seat, while the owner is temporarily absent, entitles him to his seat on his return.—Times.

On the morning of December 22d, as the Eastern train on the Shore Line from Providence, R. I., was about a mile from that city, the engineer discovered the body of a man lying between the rails. Owing to the icy state of the track the train ran about a mile before it could be stopped, when it was backed down, and it was found that the man was uninjured. He was dead drunk, and the whole train passed over him without waking him from his stupor.

MOUNT HOOD has left off smoking.

## CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna, SAN FRANCISCO.

ALL KINDS OF BRASS, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Shunting Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Brass Castings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL. (19v13-ly) J. H. WEED.



## JAMES MACKEN,

## COPPERSMITH,

No. 226 Fremont st., bet. Howard &amp; Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

## JOHN LOCHHEAD'S

## Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT to order—Marine, Stationary, or Locomotive.

HOISTING AND PUMPING ENGINES,

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.

Screw Propellers of all kinds and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular.

25v12-3m



**OIL IN TENNESSEE.**—A letter from Dixon's Springs, Smith county, Tennessee, December 12th, has been shown to the editor of the *Enterprise*. We quote:

Last Thursday two weeks, at the depth of 338 feet, we struck oil. The auger—weighing seven hundred pounds—was thrown out far above the top of the tallest trees, and having a slight inclination, described the arc of a circle in its course, falling far from the works. For five hours the oil, with water and stones, were thrown out in a manner and with a noise at once grand and inspiring; truly beyond my power to describe. No one was hurt, and there being no fire near, no other damage was done than the demolition of the derrick, etc.

The loudest noise ever heard by man, was probably that produced by the great meteor which passed over the State of Ohio on the first of May, 1860. The noise of its explosion was distinctly heard throughout a district of country whose diameter was 150 miles.

## BELLAMBI COAL!

A SUPERIOR ARTICLE OF  
**SMITHS' COAL,**  
FOR SALE IN QUANTITIES TO SUIT,  
At Greatly Reduced Rates.

Sacked to order for Shipment to the Country.  
Apply to  
**FLINT, PEABODY & CO.,**  
187 Clay 408 CALIFORNIA STREET, San Francisco.

## Bell's Assay Office.

THE UNDERSIGNED, HAVING FORMED A COPARTNERSHIP this day, would inform the former patrons and the public generally, that they will continue the ASSAY BUSINESS in all of its branches, at the old stand,

No. 512 California street,  
One door west of Montgomery, San Francisco, with the same employees, under the name of Rogers & Brown.  
MR. EDWARD WOLLER, for the last seven years Assayer for Mr. Bell, will have charge of the Assay Department.  
The Melting Department will be under the charge of MR. HENRY J. FISHER, for ten years in the United States Mint in this city and Philadelphia, and for the past seven years with Mr. Bell.  
We would inform Photographers that we are prepared to work their chloride of silver and ashes from their paper clippings.  
We have, in connection with our Assay business a Mill, and are prepared to  
**WORK GOLD AND SILVER ORES,**  
in quantities from 25 to 500 pounds; also, Assayers' Tools.  
**GEORGE E. ROGERS,  
H. W. BROWN.**  
October 13, 1866. 19v13 q11pm

## QUINCY HALL

### CLOTHING EMPORIUM!

515, 517 and 519 Washington street,  
(Near Montgomery),  
SAN FRANCISCO.

For a Dress Suit,  
A Business Suit, or  
A Working Suit,  
**GO TO QUINCY HALL!**

For Shirts, Collars, Drawers, Undershirts, Socks,  
Ties, Gloves, or any other FURNISHING GOODS,  
**GO TO QUINCY HALL!**

For Hats, Caps, Trunks, Valises and Carpet Bags,  
**JUST GO TO QUINCY HALL!**

If you want a SUIT MADE TO ORDER, of Foreign or Domestic Cloth,

**ALWAYS GO TO QUINCY HALL!**

IT IS THE LARGEST AND CHEAPEST CLOTHING HOUSE IN SAN FRANCISCO.]

All Goods Warranted as Represented

—AT—  
**QUINCY HALL,**

Nos. 515, 517 and 519 Washington street,  
19v13-3m Next to Montgomery.

Attention! Attention! Attention!  
Look to Your Health in Time!

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE**  
and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism?  
Have you the Headache? Use Healy's Rheumatic Liniment!  
Have you a Sore Throat? Use Healy's Rheumatic Liniment!  
Have you the Toothache? Use Healy's Rheumatic Liniment!  
Are you subject to Cramps? Use Healy's Rheumatic Liniment!  
And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. B. L." is stamped on the cork, and the fac simile of FRANK HEALY'S signature on the outside wrapper of the bottle.  
Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drugists and Grocers. Price, \$1.  
19v14-10p



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

**GODDARD & COMPANY.**

## DR. O. DUNNING,

Respectfully informs the public that he treats ALL DISEASES of the human system afflicted with, and can be found at his office.

Rooms Nos. 13 and 14 Government House  
Corner Washington and Sansome streets,  
18v13-6m SAN FRANCISCO, CAL.

## NEW YORK PRICES.

**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry.  
29v10-6m

## NEW YORK PRICES.

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.  
**PRICES REDUCED!**

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition. Police Revolvers, a new model, navy size, bull, 4 1/2 to 6 inch barrel; Rifle Cases—an entirely new most perfect Case. All the new models for sale very low.  
12v13-1f  
**ALBERT E. CRANE.**

## ROWLAND, WALKER & CO.,

### GROCERS,

Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
**LOWEST RATES.** Quality guaranteed.

Goods delivered at any point within the city limits.  
22v13-1y

## NATIONAL

### Insurance Company!

OF SAN FRANCISCO.

Office, No. 408 Montgomery street,  
(Near California).

**MARINE INSURANCE.**—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.  
**FIRE INSURANCE.**—Upon Buildings, Merchandise, Furniture, Rents, Vessels in Port and their Cargoes, and other Insurable Property.

Capital (Paid up) - - - \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

**WILLIAM PIERCE,** President.  
**W. W. WIGGINS,** Secretary. **A. NOYES,** Marine Officer.  
**EXECUTIVE COMMITTEE:**  
Albert D. Hille, Chairman, Joseph A. Donahue,  
R. G. Sneath, John G. Bray, 22v13-4m  
Abram Block.

## Pacific Law and Collection Office

—OF—

## W. H. ALLEN,

Attorney and Counsellor at Law,  
Principal Office at Rooms 11, 12 and 13 Amory Hall Building.

502 Montgomery Street, San Francisco, Cal.

Agencies at every City and Town on the Pacific Coast. Collections guaranteed with or without suit in all the cities and counties of the Pacific and Atlantic Coasts.

Legal advice will be given free of charge until after 1st January, 1867. Postage on letters asking advice must be paid both ways. 8v13-3m



## RADICAL CURE

—OF—

## RUPTURE!

Treatment of all Deformities of the Body by DR. A. FOLLEAU'S process. 422 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

## DR. A. FOLLEAU

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself. 8v13-1y1p

## Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN engagement as a working Superintendent in the construction or operation of a Quartz Mill. Has had five years steady and successful experience in working ores in Washoe, and is practiced in saving sulphurets and the treatment of various ores. Is prepared to furnish references for all the necessary qualifications of an intelligent, faithful and reliable quartz operator. Address F. M. SHAW, San Francisco, care Mining and Scientific Press. 14v13-1m

## CONNECTICUT

### Mutual Life Insurance Co.

The Largest Life Insurance Company in the World.

ASSETS.....\$12,000,000.

### THE CONNECTICUT MUTUAL

IS NOW THE LARGEST AND MOST PROMINENT LIFE Insurance Company in the world, and it has

The Largest Number of Members,  
The Largest Amount Insured,  
The Largest Surplus,  
The Largest Business,  
The Largest Income,

And as it obtains the LARGEST average rate of interest on its investments, and has had, through its whole history, the SMALLEST average expenses, it therefore affords insurance at LESS COST than any other Company.

The surplus premium (dividend) returned to Policy Holders during the current year is SIXTY PER CENT. of the premiums paid during the year ending 31st of January, 1863.

Insurance can be effected in this Company in all the forms desired, and to meet all the contingencies in which Life Insurance is applicable, among which forms are—

**Whole Life Policies,** by a continued annual life premium.

**Whole Life Policies,** by TEN annual premiums.

**Endowment Policies,** by a continued annual premium.

**Endowment Policies,** by a limited annual premium, for FIVE, TEN, FIFTEEN or TWENTY years.

**Endowment Policies,** made payable at any age stipulated.

ALL POLICIES issued by this Company are either non-forfeitable by their terms, or may be converted into those which are so, at the option of the insured.

This Company offers all the advantages of a CASH or NOTE Company. The assured are not required to give a note in part payment of the premium, but may, if preferred, pay the first four premiums in cash after which their dividends on Annual Premium Life, and Continued Premium Endowment Policies, will, if the past success of the Company is continued, reduce their premiums one HALF. When notes are given for Annual Life and Continued Endowment Premiums, no notes will be required after the fourth payment, and the returned surplus—dividends—will be applied as cash to the reduction of the annual premium.

None but Unexceptional Risks Accepted; and only upon ages between Fourteen and Sixty.

### DIRECTORS:

JAMES GOODWIN, HENRY C. ROBINSON,  
GEORGE S. GILMAN, GUY R. PHELPS,  
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GUY R. PHELPS, President.

Z. PRESTON, Vice-President.

W. S. OLMSTEAD, Secretary.

O. W. POWERS, Actuary.

**A. D. SMITH & CO.,**

General Agents Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets, San Francisco. 17v13 p11

## Accidental Insurance!

### The Accidental Insurance Company OF NEW YORK,

ISSUES POLICIES INSURING AGAINST INJURIES OF all kinds, and death resulting from accident. In case death does not result from the injury, the insured receives a weekly compensation as long as he is disabled (not to exceed twenty-six weeks).

### ONE YEAR POLICIES.

\$5 will buy Policy for \$1,000, with weekly compensation of \$5.

\$10 will buy Policy for \$2,000, with weekly compensation of \$10.

\$50 will buy Policy for \$10,000, with weekly compensation of \$50.

### SHORT TERM POLICIES.

Policies will also be issued for any other amounts within the limits before stated, for periods of one to six months, at rates in tenths of the Annual rate, as follows:

1 month,	2-10.	4 months,	5-10.
2 "	3-10.	5 "	6-10.
3 "	4-10.	6 "	7-10.

### GENERAL ACCIDENT TICKETS.

This Company also issues Tickets which are sold by many of its Agents at Hotels and Ticket Offices through the country.

They make Insurance for \$5,000, and \$25 per week compensation, against Accidents of every description, Traveling or otherwise; good for one to six days, as required, at TWENTY-FIVE CENTS PER DAY.

They are not simply Travelers' Insurance Tickets which cover only injury or death, the result of an "Accident to the Public conveyance in which the assured may at the time be traveling," but they are GENERAL ACCIDENT TICKETS.

### SEA VOYAGE POLICIES

Are issued, covering the risks of travel to European and other Ports. Rates varying with the season, and the voyage to be taken. Information can be had of the Company or its Agents.

The Company has a PAID UP CASH CAPITAL OF \$250,000. One hundred thousand dollars deposited with Wm. Barnes, Esq., Superintendent of the Insurance Department of the State of New York, and the remainder securely invested in Stocks in the hands of the Company.

### INDUCEMENTS.

The rates of Premium are very low. The Plan is so simple that any one can comprehend its workings.

No MEDICAL EXAMINATION is required, and those who have been rejected by Life Companies, in consequence of hereditary or other diseases, can effect Insurance in this Company at a very small cost.

No better or more satisfactory use can be made of so small a sum.

For Policies or further information, apply to

**A. D. SMITH & CO.,**

General Agents for the Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets San Francisco. 17v13



The gold mines on the Potomac river, a few miles above Washington, are being profitably worked, and expensive machinery is being erected. A new company has just commenced operations, with General Denver, formerly of Colorado, as President.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices  
In this City,  
**536** Try them  
With a Job,  
And you will be  
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upon all questions relating to Mining Laws. 1v14-1m

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L. B. Benichay. 4v13tf

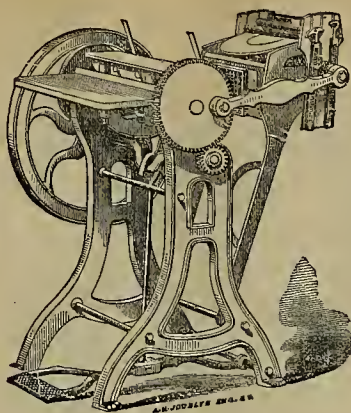
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VOLUME TWELFTH.—The Mining and Scientific Press with  
its last issue, commenced its twelfth volume. Since  
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#### PATENT BUSINESS.

We have lately associated with us in the Patent and Me-  
chanical Department of the Mining and Scientific Press, a  
gentleman of superior ability and attainments, who has  
arrived direct from the leading patent agency in New York  
City, and having a faithful and reliable associate in Wash-  
ington City, we are now better than ever before prepared  
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San Francisco, June, 1866. Patent Solicitors

A splendid paper, and should have a good list of sub-  
scribers in prosperous Grass Valley.—[G. V. National.



## New Mining Laws of California and Nevada.

We have just issued, in cheap edition, the new laws relating to mining and corporations in California and Nevada, passed in 1865-6. Some of these laws are of the highest importance to parties interested in the matter of locating and holding claims, and prospecting mines, in these States. Copies sent by mail. Price, 25 cents.

Address, DEWEY & Co., Patent Agents.  
San Francisco, May 1st, 1866.

## New Mining Advertisements.

## Cosita Silver Mining Company, Cosita District, State of Mineral, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the seventh day of December, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Arroy, Walter W.	50	25	25 00
Arroy, Walter W.	50	25	25 00
Brown, P. J.	605	25	25 00
Clutman, T. P.	568	25	25 00
Frederick, James	604	50	50 00
Kelley, J. C.	604	133	133 00
Murdoch, A. H.	605	25	25 00
O'Brien, Thomas	604	25	25 00
Elce, T. M.	587	5	5 00
Thompson, I. D.	555	25	25 00

And in accordance with law, and an order of the Board of Trustees, made on the seventh day of December, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction rooms of Maurice Dore & Co., No. 27 Montgomery street, San Francisco, Cal., on Monday, the eleventh day of February, 1867, at the hour of 12 o'clock, M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, No. 510 Battery street, opposite the Custom House, San Francisco, Cal. Jan 25

## Hudson Copper Mining Company, Low Divide District, Del Norte County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-second day of December, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Rydalor, John	12	1 1/2	1 10
Guyard, Charles	50	51	2 30
Hulley, Eben	2	2	2 30
Huyas, Geo. K.	74	100	15 00
Kelley, Simon	83	13	13 25
Powers, C. A.	40	40	5 00
Reed, Sarah M.	11	26 1/2	4 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of December, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the Secretary's office, No. 69 Market street, San Francisco, Cal., on Friday, the eighth day of February, 1867, at the hour of 12 o'clock, M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, No. 69 Market street, San Francisco, Cal. Jan 26

## Keystone Mining Company, Location of Works Copperopolis, Calaveras County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-first day of November, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
C. Dunham	162	2	\$20 00
C. H. Dunham	159	3	30 00
E. H. Alley	163	3	30 00
E. H. Alley	198	3	50 00
John M. Boyce	164	5	50 00
John M. Boyce	137	80	80 00
Isaac F. Crutt, Trustee	165	6	50 00
Isaac F. Crutt, Trustee	165	8	80 00
H. H. Hewitt	174	100	100 00
Willard Hodges	175	12	120 00
H. H. Hickman	105	72	750 00
P. H. Hues	201	12	120 00
W. H. Lawrence	89	100	100 00
W. J. McCormick	81	25	50 00
W. J. McCormick	159	25	250 00
Steele Ruffin	208	8	80 00
E. H. Jones	137	18	180 00
E. H. Jones	142	10	100 00
E. H. Jones	143	10	100 00
Wm Babson	145	20	200 00
Wm Babson	157	330	330 00
Jacob Hall	147	20	200 00
Jacob Hall	147	33	330 00
E. W. Gilmore	148	50	500 00
E. W. Gilmore	156	83	830 00
E. H. Baker	155	25	250 00
E. H. Baker	191	41	410 00
E. K. Honen	150	15	150 00
B. K. Houch	189	25	250 00
Ichabod Howland	152	10	100 00
Ichabod Howland	184	16	160 00
A. Gilmore	153	6	60 00
A. Gilmore	194	8	80 00
Mrs. Adella Tryon	170	25	250 00
E. H. Jones	174	8	80 00
E. S. Pillsbury	213	20	200 00
C. J. Morrill	151	15	150 00
C. J. Morrill	190	25	250 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-first day of November, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, 404 Montgomery street, San Francisco, Cal., on Monday, the eleventh day of February, 1867, at the hour of 1 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, 404 California street, San Francisco. Jan 24

## Lady Bell Copper Mining Company, Low Divide Mining District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of January, 1867, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to J. K. Johnson, Crescent City.

Any stock upon which said assessment shall remain unpaid on the fourteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 311 Market street, San Francisco, Cal. Jan 26

**Postponements and Alterations.**—Secretaries are requested to give notice of postponements, or alterations which they may desire made in their advertisements at their earliest convenience. Now advertisements should be sent in as early as possible.

## Libertad Gold and Silver Mining Company.

Location of Works: Del Norte County, California.

Notice.—The Annual Meeting of the Stockholders of the above named Company, will be held at the Police Court Room, in San Francisco, on MONDAY EVENING, February 4th, 1867, at 7 1/2 o'clock.

Jan 26th LAWRENCE C. OWEN, Secretary.

## Siskiyou Mining Company. Location of Works:

Middle Fork of Humboldt Creek, in the County of Siskiyou, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of December, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Ferd Wagner	210	10	\$20 00
Ferd Wagner	216	10	50 00
J. S. Caley	53	25	125 00
J. S. Caley	54	25	125 00
A. H. Haverly	212	1	5 00
William Mettel	27	10	50 00
Wm B. Maxwell	154	5	30 00
Charles Hewitt	2	50	250 00
Frederick Stacey	3	1	5 00
Clementine Pledge	115	7	35 00
E. J. Pfeiffer	15	15	75 00
E. J. Pfeiffer	16	15	75 00
E. J. Pfeiffer	214	10	50 00
Louis Pledge	34	5	25 00
Frederick Stacey	171	5	25 00
Elas Stacey	178	15	75 00
Branschild & Weber	107	25	125 00
Ellen Lynch	71	2	10 00
Frederick Wiland	85	10	50 00
Frank Dodge	6	25	125 00
George Burkhardt	89	3	15 00
George Burkhardt	153	7	35 00
John B. Hawton	185	10	50 00
J. D. Lawton	204	2	10 00
DeWitt Hulce	124	11	55 00
John D. Willson	46	2	10 00
Frederick Stacey	102	10	50 00
S. S. Kennedy	113	25	125 00
O. S. Brack	111	3	15 00
Broadwell & Noll	116	2	10 00
Daniel Turner	120	10	50 00
Robert A. Hunter	119	3	15 00
James Murphy	123	2	10 00
A. B. Goff	126	10	50 00
David S. Cooley	162	5	25 00
David S. Cooley	204	5	25 00
J. Van K. Hall	163	8	40 00
John B. Hawton	169	20	100 00
Jos S. Millen	178	10	50 00
Lewis Tesse, Sen	195	22	110 00
E. E. Bighlow	192	25	125 00
Mary E. Grant	195	12	60 00
Albert Farrar	195	25	125 00
Albert Farrar	191	25	125 00
Wm H. Clark	193	10	50 00
J. Madison Platt	175	10	50 00
E. C. Boobar	222	20	100 00
John Canmet	224	100	500 00
John Canmet	223	100	500 00
John Canmet	224	105	525 00
John Canmet	226	50	250 00
Francis Clarke	225	10	50 00
James T. McDonald	68	16	80 00
Henry A. Thompson	191	10	50 00
Wm H. Clark	206	100	500 00
Wm H. Clark	207	100	500 00
Wm H. Clark	208	100	500 00
Wm H. Clark	209	53	265 00
Wm H. Clark	216	100	500 00
Wm H. Clark	217	100	500 00
Wm H. Clark	218	103	515 00
Wm H. Clark	219	50	250 00
Wm H. Clark	220	10	50 00

Total 1,450 \$7,250 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of December, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Joseph & Company, auctioneers, in the building southeast corner of Pine and Montgomery streets, in the City and County of San Francisco, State of California, on Wednesday, the twentieth day of February, 1867, at the hour of 11 o'clock, A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, No. 43 Exchange Building, N. W. corner of Montgomery and Washington streets, San Francisco, California. Jan 26

## Mining Notices—Continued.

## Arizona Consolidated Mining Company, Encina District, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, at the office of the Company, No. 611 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 611 Clay street, San Francisco. Jan 19

## Big Blue Lead Gold and Silver Mining Company.

Location of Works: Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of January, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, M. G. Elmore, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twelfth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 302 Montgomery street, San Francisco. Jan 9

## Dios Padre Gold and Silver Mining Company.

Location of Works: Alamos, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of December, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
William Bihler	229	25	125 00
William Bihler	323	5	25 00
William Bihler	411	25	125 00
William Bihler	412	25	125 00
A. C. Treachy	371	145	425 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of December, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., 418 Montgomery street, San Francisco, Cal., on the twenty-ninth day of January, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, No. 1 Government House, corner Sansome and Washington streets, San Francisco, Cal. Jan 5

## Evoca Consolidated Copper Mining Company.

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of January, 1867, an assessment of twenty-five cents (25) per share was levied upon the assessable capital stock of said Company, payable on the eleventh day of February, 1867, in United States gold and silver coin, to the Treasurer, A. E. Thayer, at the office of the Company, at No. 332 Merchant street, Room No. 3, in the City and County of San Francisco, State of California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twelfth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the thirteenth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office of Company, No. 332 Merchant street, Room No. 3, San Francisco, California. Jan 9

## George Washington Gold and Silver Mining Company.

Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 16.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirty-first day of December, 1866, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 338 Montgomery street, San Francisco. Jan 5

## Hope Gravel Mining Company.—Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment (No. 12) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable on the twelfth day of February, 1867, in gold and silver coin of the United States, to David Wilkie, Secretary, at the office of the Company, No. 529 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on Saturday, the twenty-third day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 529 Clay street, San Francisco, Cal. Jan 9-5w

## Julia Gold and Silver Mining Company, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of January, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, 607 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the sixth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 607 Washington street, San Francisco, Cal. Jan 2

## Josephine Copper Mining Company. Location of Works: Gopher District, Calaveras County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-eighth day of November, 1865, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J. S. Cronise	174	50	\$50 00
J. S. Cronise	175	50	50 00
J. S. Cronise	176	50	50 00
J. S. Cronise	177	50	50 00
J. S. Cronise	178	50	50 00
J. S. Cronise	179	50	50 00
J. S. Cronise	180	50	50 00
J. S. Cronise	181	50	50 00
J. S. Cronise	182	50	50 00
J. S. Cronise	183	50	50 00
J. S. Cronise	184	50	50 00
J. S. Cronise	185	50	50 00
J. S. Cronise	186	50	50 00
J. S. Cronise	187	50	50 00
J. S. Cronise	217	50	50 00
J. S. Cronise	218	50	50 00
J. S. Cronise	219	50	50 00
J. S. Cronise	220	50	50 00
J. S. Cronise	221	50	50 00
J. S. Cronise	222	50	50 00
J. S. Cronise	223	50	50 00
J. S. Cronise	224	50	50 00
J. S. Cronise	225	50	50 00
J. S. Cronise	226	50	50 00
J. S. Cronise	227	50	50 00
J. S. Cronise	228	50	50 00
J. S. Cronise	229	45	45 00
W. R. Yronise	231	1	1 00
James Frechman	234	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-eighth day of November, 1865, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Olney & Co., No. 418 Montgomery street, San Francisco, Cal., on the fourth day of February, 1867, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

Office, No. 1 Government House, corner Sansome and Washington streets. Jan 9

## North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.

Notice is hereby given, that at a regular monthly meeting of the Board of Trustees of said Company, held on the eleventh day of January, 1867, an assessment of twelve dollars and fifty cents (\$12.50) per share was levied upon the capital stock of said Company, payable January twelfth, 1867, in United States gold coin, to the Secretary, at the office of the Association, No. 418



## Machinery.

## V. CUSHING, Agent

—FOR THE—

Purchase & Shipping of Machinery  
OF ALL KINDS.

Especial attention given to **Quartz Mill Machinery** and **Findings**, and **Miners' Material** of every description.

Being a **PRACTICAL MACHINIST**, and giving my personal attention to the execution of orders, I can guarantee the **BEST** class of work at the **LOWEST PRICE** in the city.

Refer, by permission, to—

Governor P. F. Low, San Francisco; G. T. Meador, Stockton; Jacob Underhill & Co., San Francisco; J. W. Stowe, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco. 4v12

## HUNTER'S

## IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the **UNION FOUNDRY**, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

## VARNEY'S

## PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as the Follows:

The pan being filled, the motion of the mill forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is drawn to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Scalers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the **PACIFIC FOUNDRY**, 1v1 San Francisco.

## BRUCKNER'S

## Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1865.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which

ORRATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market street, San Francisco.

## Notice to Miners,

## Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,  
8v13-1y Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

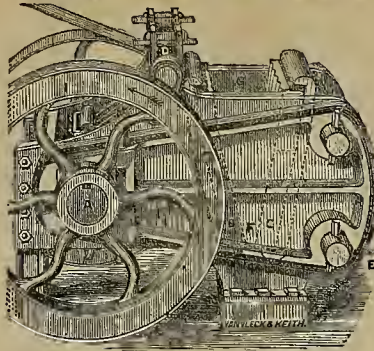
## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco,  
22v12 3m

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Crushing Quartz, or other Rocks, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advantages are enabled to offer these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600

No. 2—Or 15-inch Crusher, capable of similarly pitting through five to six tons per hour, \$850

No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour, \$1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in rotation with the link, D, gives the movable jaw, A, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county, California, dated Sept. 28, 1865.

JAMES BRODIE, Esq., San Francisco—My Dear Sir: I give you pleasure to inform you that I have for the past three months had one of your latest sized Rock Crushers in use at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply, and properly preparing quartz for the stamps. Yours truly,

R. P. JOHNSON,  
Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1865, the royalty charged for using the same will be raised to the sum of \$500 per barrel.

A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1865.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

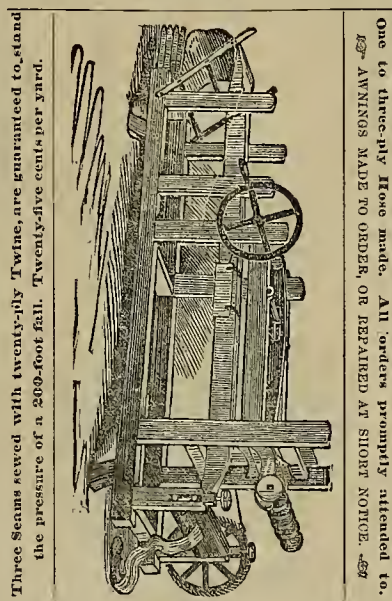
A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1865.

**BRODIE & BAILEY**,  
Express Building, 402 Montgomery street, San Francisco.

12v13f

## PATENT HYDRAULIC ROSE SEWING

By S. HOWARD,



Three Seams sewed with twenty-five Twine, are guaranteed to stand the pressure of a 200-foot fall. Twenty-five cents per yard.

No. 326 DAVIS STREET, San Francisco.

22v13-3m

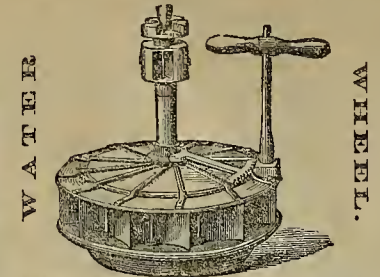
## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ques. In lots not exceeding 2,000 pounds, tested by 2v13 O. W. STRONG, Assayer.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALED AND UNRIVALED IN the United States or of the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REPRESENTATIVES: E. L. Stetson, Holston, O. Slimmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular, to

KNAPP & GRANT, Agents for California.

26v13-1yq 310 Washington street, San Francisco

## Hunt's California Pump

Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and as force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years.

Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Irrigation, big, Saw Frames, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.

## PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3—3 inch cylinder, 6 inch stroke, \$30 00

No. 4—3 1/2 inch cylinder, 6 inch stroke, 35 00

No. 5—4 inch cylinder, 6 inch stroke, 40 00

No. 6—5 inch cylinder, 8 inch stroke, 45 00

No. 8—6 inch cylinder, 12 inch stroke, 50 00

For further particulars, send for Circular.

E. O. HUNT,  
21v13f 23 Second and 110 Jessie street, San Francisco.

J. MARSHALL W. WYLIE.

## GLASGOW

## IRON AND METAL IMPORTING CO.,

No. 27 Fremont street,

SAN FRANCISCO.

Reg to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined

Bar Iron, Boiler Plate, Anvils, Cast Steel,

Boiler Tubes, Gas and Water Pipes,

GAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have special facilities for supplying the constant demands of the market.

Country Orders punctually attended to. 19v13-q

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for. 1v14-3m

JAMES HITCHENS.

## FOR SALE!

## QUARTZ AND MINING MACHINERY

ONE GARDNER'S THUNDERBOLT CRUSHER, LARGEST size and best quality; is entirely new, with all extras with a large lot of other Quartz Machinery, including Engines, Boilers, etc.

COFFEY &amp; RISDO

16v13

## Job Printing Press for Sale--\$250.

A Largest Size (half medium) RUGGLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to

DEWEY &amp; CO.,

Mining and Scientific Press Office.

**Economy in Advertising.**—The MINING AND SCIENTIFIC PRESS is the best and most economical mining advertising medium in this city. Our terms are less than one half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

A NEW PROJECTILE.—Mr. Gale, whose inventions in the line of firearms and ammunition is already well and favorably known, has recently devised what he calls a "rudder-tail bullet." The explosive by which it is propelled is not powder, but a fulminate, 25 per cent. stronger than ordinary gunpowder, with which a strip of paper is saturated. The following description will convey a very clear idea of both the fulminate and the form of the bullet, if such this curious projectile may be called:

Suppose this strip coiled around the shank of a common round-headed hobnail, and a percussion cap stuck on its point. Now a bullet very like in form to this hobnail, is what Mr. Gale calls his rudder-tail ball. At the first glance it is evident that the lever attached to the ball must make it fly straight. The rudder-tail converts it into a short dart, and the leverage of the shaft must act upon the air without cessation and keep the point of the head always straight to the mark. This ball may be fired from a smooth-bore or a rifle; it would fly straight, projected from either. This fulminate is composed of chlorate of potash and other substances. Paper, linen, and fibrous materials are saturated with it, and the sheets rolled up and cut into cartridges of various diameters and lengths, according to the operations for which they may be required. Such a cartridge roll can be pushed at once down into the blasting hole, and the damp or wet condition of the rock will in no way affect it, as the cartridge is thoroughly water-proofed, and might even itself be used to drive the water out of the hole. It can be manufactured quite as cheaply as, if not far less than gunpowder; while the preparation of it is quite harmless and not dangerous, there being no risk of explosion in the mixing or saturating processes. Mr. Gale has also perfected what he calls a fog shell and a halloon-shell, the last of most destructive properties. The object of the fog shell is that, thrown on board ship it will, after a certain lapse of time, generate a dense vapor through which the sailors and marines shall find it impossible to see, and therefore to defend themselves with any certainty; or it may be used, on the other hand, for producing a dense cloud behind which a ship may itself escape attack. The halloon-shell is filled with a fulminate which may be dropped from any height and exploded by its fall. This fulminate is said to be so fearfully explosive that a shell off-inch diameter will be equal to clearing a large space or area of some hundreds of square feet of all but ponderous objects.

ARIZONA—SUCCESSFUL MILLING.—A correspondent of the *Alta*, writing from Prescott, Arizona, under date of Dec. 16th, 1866, speaks as follows of the yield of several quartz mills which have recently been started in that Territory:

The run of the Sterling mill last week cleaned up \$100 to the ton, and the tailings show that they do not save all the gold. Berger & Co.'s mill, on Big Bug, is running, and so far they have cleaned up from \$40 to \$60 per ton. I think they have a fine prospect before them for a fortune, as they have the best mill in all Arizona. Woolsey's water mill, near Big Bug, is running and doing well for a 5-stamp mill. He has cleaned up from \$45 to \$116 to the ton from the Ticonderoga mine. Tyson & Co. are doing well on the Eureka, and they cannot save all their gold for the sulphurets. Col. Coffin will start his mill on the Bully Bueno mine this week. They have 500 tons of ore on the surface that promises to pay well. Mr. Noyes is progressing rapidly with his mill, on the Umpqua mine, which, judging from the work done on it, bids fair to be counted among our best mines. Taking all our mines together, the prospects are as good as any one could wish for a splendid outcome in the spring. Wages are fair here, being from \$75 to \$125 per month and board for good miners. The Indians have been very quiet of late.

RAISINS.—The raisin' of grapes for raisins is beginning to be carried on to considerable extent in Tulare county. The *Delta* says the California or Mission grape, is not a true raisin grape. It is all skin and bone when dried. A heavy pulp is essential. The Rose de Peru, the Muscat of Alexandria, the Red and White Syrian, the Black Hamburg, and especially the Fierzago, are well suited to this purpose. California raisins will yet take the place of the imported.

A CONNECTICUT man by the name of Phillips, invented friction matches in 1832.



**WHERE IS THE OUTLET?**—We clip the following from the *Reese River Recaller*:

In a small valley lying between the districts of Hot Creek and Keyville, about one hundred and twenty miles southeast of Austin, there is a group of springs, fifteen to twenty in number, which teem with fish. The springs are circular in form, and vary in diameter from one foot to fifteen feet. They are reported to be of great depth, and frequent attempts have been made to sound them, but no plummet cast into their waters has ever found bottom. In every instance the water of the springs was found to be icy cold and beautifully limpid. They abound in fish of one variety, a species of chub, ranging from six to eighteen inches in length. A party of men, recently encamped in the vicinity of the springs, caught three hundred of these chubs in a short time, and found them a delicious variety in their ordinary bill of fare. These springs, as they are called, are supposed to be the openings on the surface of a subterranean lake, or "sink," whose outlet or inlet has not yet been observed.

Great numbers of the same kind of "springs" are found not far from Black Rock, in Northwestern Nevada. We have stood upon the matted grass, near those springs, and by a slight action of the body shaken the ground for half an acre around; showing that the earth upon which we stood was but a thin crust of turf and soft mud, overlying a vast subterranean lake. Like the springs referred to by our Reese River contemporary, they were of a depth unfathomable by any means then at hand—nor have we heard that the depth has since been ascertained.

**GOULD & CURRY.**—The average value of ore from this mine when first opened in 1860, was, as appears by the Stock Circular published in our issue of January 12th, \$156 per ton. In 1866, it was only \$28. The principal cause for this decline in value, says the *Times* of this city, arises from the fact, that in proportion as the working of the mine increased in depth, the more pure the silver becomes, while nearer the surface the proportion of gold was large enough to make one ounce equal in value to six ounces obtained 600 feet deep. This remarkable depreciation in the value of Washoe bullion is a matter of deep interest to men of science as well as the owners of feet.

**SUTRO TUNNEL.**—The Gould & Curry and the Hale & Norcross Companies will each aid the Sutro Tunnel project to the amount of \$100,000.

#### MELLVILLE C. KEITH, M. D.

Homeopathic Physician,  
No. 655 Howard Street, between Second and Third,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
18713 6mnr

**Mammoth Quartz Lode, Keyville District, Kern County.**

"To all whom it may Concern."

ALL PARTIES negotiating for Interests in the above Lode, would do well to examine titles before investing, as the legal title to a considerable portion thereof is vested in the undersigned.

WILLIAM MARSH,  
W. L. KENNEDY,  
Keyville, Kern County, Oct. 1, 1866. 16v13nr5m

**WE ARE NOW OFFERING  
OUR IMMENSE STOCK  
—OF—  
Fine Custom Made Clothing**

—AND—  
Gents' Furnishing Goods

**AT PRICES THAT DEFY COMPETITION.**  
Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**

BOTH OF MATERIAL AND FINISH.

A Large Assortment of  
Trunks, Valises, Carpet Bags, Blankets, Etc.,  
AT EXTREMELY LOW PRICES.

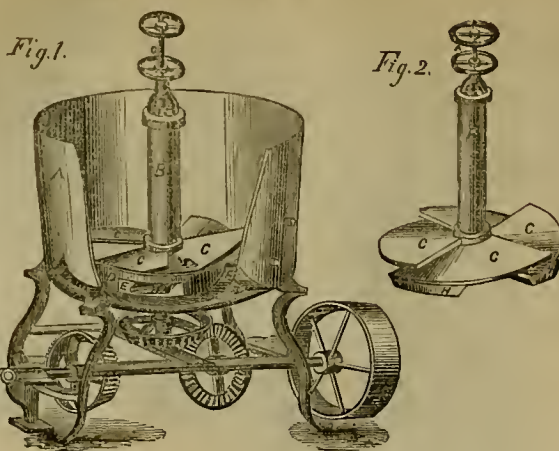
**J. R. MEAD & CO.,**  
Cor. of Washington and Sansome streets.

Our Patent Agency.

The Patent Agency of the Mining and Scientific Press has been signalled with remarkable success during the past two years. The importance to the inventive genius of this coast of a thorough and reliable agency for the solicitation of Letters Patent from the United States and foreign Governments cannot be over-rated, and the Proprietors of the Press, feeling the responsibility which rests upon them, and the reward which must follow the faithful performance of their trusts, will take care to afford inventors every advantage to be secured to them through a competent and responsible agency upon this coast.

## Gaston's Screw Grinder and Amalgamator

—is—  
The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect sifter. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

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NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
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THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on MR. WILLIAM SLOSSON, at Prof. W. P. Baker's Office, and obtain a Business Circular, just published by the WILSON'S AMALGAMATOR COMPANY of New York, who have secured, under the Patents of Prof. Henry Wilson, the sole and exclusive right to the use of gold in amalgamation. Mr. Slosson is prepared to supply the license of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Barnard, of Columbia College, "two grains of gold may be gathered where but one was before." 18v13-2m



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THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 16v12q

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Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Boils, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this, justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Arsenic nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."

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22v13-3m

## Rheumatism!!

Still Another Witness!

(White Oak Township, El Dorado Co.,  
LATROBE, Cal., Sept. 19, 1866.)  
This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than at times a slight and temporary relief.  
About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably put it to flight. I therefore cordially recommend it to the afflicted as an unfailing remedy for Rheumatism.  
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13v13tf

## REPORT

—OF THE—

**COMMITTEE**

—ON—

## SEWING MACHINES!

California State Fair, 1866:

"To THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

**FOR GENERAL FAMILY USE**

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(Signed)

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THOMAS C. McHALE,  
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If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco.  
17v13



**LEGAL WEIGHTS OF GRAIN.**—According to Act of Congress, the duties upon grain importations are estimated upon bushels ascertained by weight, and not by measure. Sixty pounds of wheat, fifty-six of corn, fifty-six of rye, forty-eight of barley, thirty-two of oats, sixty of peas, forty-two of buckwheat, avoirdupois weight, are respectively estimated as a bushel.

The offer of sixteen hundred thousand dollars has been made for the admission fees to the Paris Exposition; one-half of this sum to be paid at once, the other at the opening. Although this would have secured the guarantors from all risk, the offer was declined.

**TISSUE PAPER** is now used by Vienna surgeons as a substitute for lint. It is cheaper, and in many cases will answer the purpose perfectly.

**FAXON & BROWN** have an extensive soapstone quarry near Sonoma in Tuolumne county. It is of the finest quality. They are now working it.

THE OLDEST BELL in France was first put in position in the year 1001. It still chimes out its notes, as of old, near La-Clayette on the Loire.

TWENTY tons of postage stamps have been used during the past year, says the *Scientific American*.

### Consumption Cured.

FULTON, Hamilton Co., Ohio, May 19, 1863—Gents: This is to certify that my daughter was taken with a severe cold, which settled upon her lungs, attended with violent coughing. The cough became incessant and distressing, with pain and great difficulty of breathing. It went on until she was nearly dead, when she raised large quantities of phlegm and matter. The attending physicians examined her, and said that they thought one of her lungs was almost gone, and that they believed she could not be cured, as she had the last stages of consumption. At this time she was induced to try ALLEN'S LUNG BALSAM, having heard of its many remarkable cures. On using the Balsam, it seemed to go to the very seat of the disease at once, as it caused her to expectorate large quantities of phlegm. The cough began to mend; the soreness of the lungs was relieved; the strength and appetite returned. By the use of only three bottles, she, to all appearances, had recovered her health, and now feeds as well as ever. Respectfully yours, LUCIUS PECK.

Sold by all Medicine dealers everywhere. 1v14-1m

ESTABLISHED [MAR, 1860.]  
VOLUME FOURTEEN

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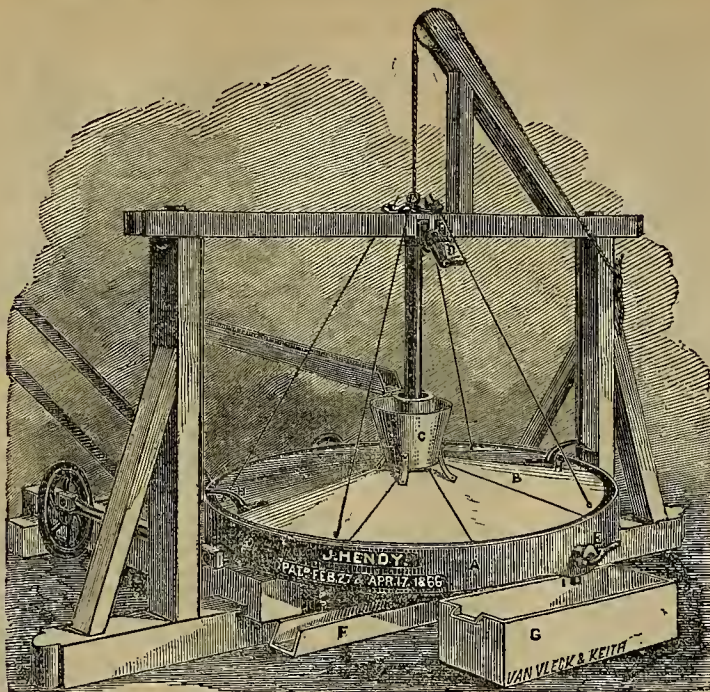
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## HENDY'S CONCENTRATOR.

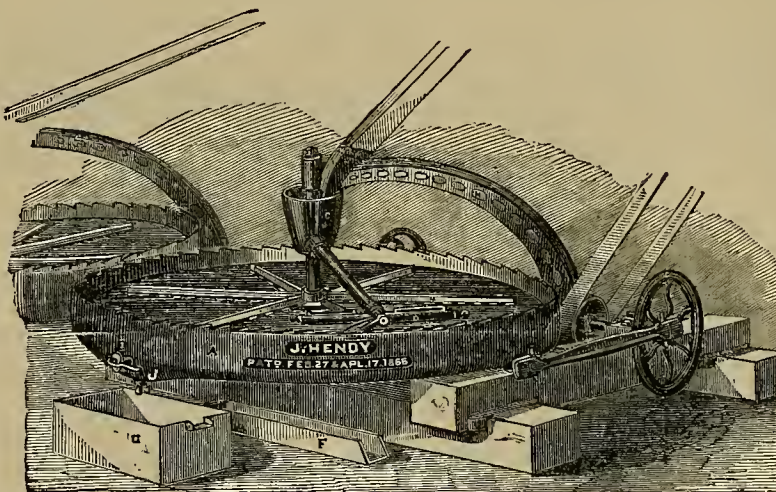


### Hendy's Improved Patent Self-Discharging Sulphurets PRATER CONCENTRATOR Is Receiving Universal Favor.

Reference is made to the following Mills which have them now in use:

BENTON MILL, Bear Valley, Mariposa County.  
LOUISIANA MILL, near Goulterville, Mariposa County.  
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And in use in many other parts of this State; also in Idaho, Arizona, Colorado and Mexico.



### Hendy's Latest Improved Concentrator, for Gold and Silver Ores, With Revolving Stirrers and Rotary Distributor.

By this improvement the conical feeding distributor has been entirely done away with. The feed in this machine is made to enter the conical hopper; from thence it passes through the hollow arm, leading to the T attachment, marked D, which is made to sweep slowly around the circumference of the pan, by means of the roller teeth upon the upper edge of the same, into which two pawls are seen to work. This motion is obtained from the vibrating action of the pan, as in common use. Upon the under side of the T attachment to the arm, are small openings or perforations, through which the pulp is dropped from the feeder into the pan. The constant revolution of this arm secures a more uniform feed than can be obtained from the conical feeder. A set of stirrers, with small projectors or teeth is shown, which is also kept in revolution with the feeding arm, the design of which is to prevent the sand from packing near the center, where the motion is diminishing. The discharge orifice and box for receiving the sulphurets will be readily distinguished at box C. These pans may be so connected, as in the cut, that two can be driven by one shaft and pulleys. These machines have been thoroughly tested, and pronounced a perfect success.

#### Certificates:

JOSHUA HENDY, Esq.—Dear Sir: I have been using three of your Improved Concentrators for the past four months, at the Spring Hill Mill, and they give perfect satisfaction.  
Yours truly,  
WM. H. HOOPER.

Two of these Improved Machines have been ordered by Mr. Hooper, for the Gold Hill Mill, at Grass Valley.

JOSHUA HENDY, Esq., San Francisco.—My Dear Sir: It gives me pleasure to inform you that the four "Improved Self-Discharging Prater Concentrators," which I purchased from you, have now been in operation in the Rawhide Mining Company's Mill for more than two months, and have more than realized my expectations. I am free to say it is the best Machine for saving Quicksilver, Amalgam, and Sulphurets that I have ever used or seen used for that purpose. I shall take pleasure in showing any one interested the Machine in operation, who will call at the mill. I shall need four more as soon as the balance of our mill is completed. Yours truly,  
R. P. JOHNSON, Superintendent Rawhide Mill Company.

This Machine can be seen at H. J. Booth & Co's, Union Foundry, First street, corner of Mission. For further particulars, send for a Circular. Address,

J. HENDY.

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N. B.—The proprietor is prepared to furnish these Machines on thirty days trial, to responsible parties.  
26v13-1st31st

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May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 85 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.  
Inquire at the office of the Foundry, or address  
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One of the above steamers leave BROADWAY WHARF

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13v12

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GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$80,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELL & CO. FIDELITY, Bankers,  
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SAN FRANCISCO, SATURDAY, FEBRUARY 2, 1867.

VOLUME XIV.  
Number 5.

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Mining Shareholders' Directory.  
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San Francisco Weekly Stock Circular.

**THE BULLION PRODUCT OF IDAHO AND MONTANA.**—The report of the Internal Revenue Collector of the district of Owyhee, Idaho Territory, shows that the total produce of bullion for that district alone, for the ten months previous to November 1st, 1866, which came before his official cognizance, was \$1,073,256. He reports that a large amount found its way out of the Territory under conditions of which he could get no account, which, together with the rich ore from the Poorman's mine, etc., sent East for working, reached fully to the value \$500,000. He estimates the product of that district for the entire year at over \$2,000,000. He thinks the yield of 1867 will reach \$5,000,000. It is estimated that at least \$12,000,000, in gold dust and bullion, has reached St. Joseph during the past year, overland, from Montana, Idaho and Colorado. When the railroad is completed to Colorado, and protection for settlers secured in our central territories, the yield of bullion from the localities named will be immense, while that of Nevada, California, and Arizona will also be proportionately increased.

**THE NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY,** of Milwaukee, has established an agency here, and appointed M. G. Elmore general agent for the Pacific coast. This company was organized in 1859, and now numbers over fifteen thousand members, with nearly two million dollars assets, having doubled its assets within the last year. It is the largest company west of the seaboard cities. Its location where mortality is low and capital high must insure large dividends, and enable its managers to offer lower rates of premiums than those of other companies located where these advantages do not exist. United with these highly favorable features, the fact that it is a purely mutual company, dividing all its profits among the insured, must command a rapidly increasing patronage. The *Insurance Monitor* and *Wall Street Review* very truthfully say: "This company is worthy of that great, vital, essentially and incalculably rich and marvellously improving section of the Union from which it derives its title, and has acquired its present growth and bulk. We predict for the Northwestern Life a future which in brilliancy and increase will eclipse many of our most promising Life companies." We would advise those about insuring to call on the agent, 302 Montgomery street.

## Lyon & Isaacs's Self-feeding Drill.

This drill is especially well-suited for the use of carriage and car makers, and all others who are not so expert as machinists

lifting-lever, D, and set at more or less distance from the fulcrum, so as to give the proper feed-pressure upon the drill. The lever, D, is linked to the lever, C, the connection being inside the framing; and the

raised, lowered, and swung on its crane axis; and it has several rows of holes for holding bolts, so that work of nearly all kinds can be conveniently fastened to it. There is a recess, K, in the frame, to make room for large pieces; and holes may be drilled in any part of a piece of four feet diameter. Power is applied by a belt to the fast and loose pulleys, J, from which it is transmitted by another belt to the cone-pulleys on the shaft, I, I, on the end of which is a bevel-wheel gearing with a bevel-wheel on the vertical drill-arbor, L.

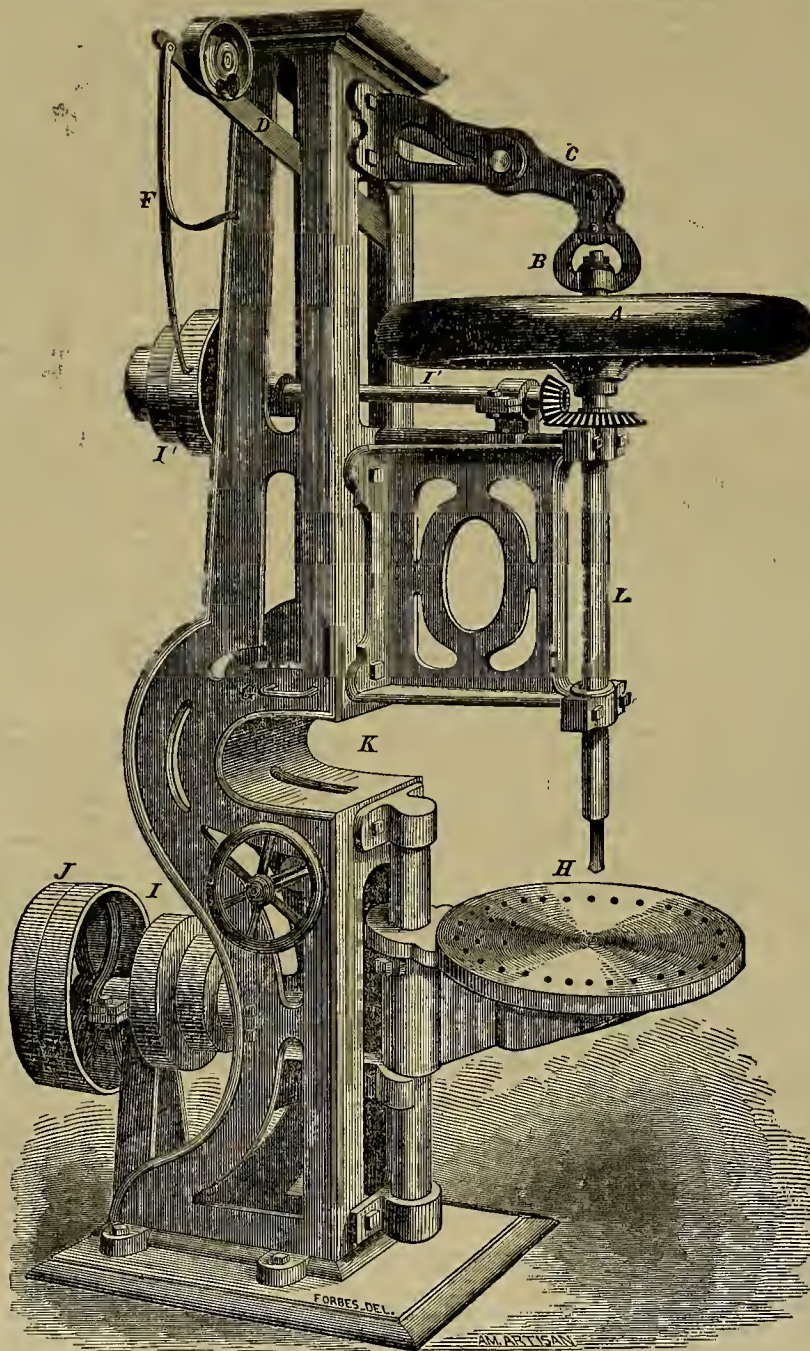
The drill has a gauge-check to limit the depth of the holes; and any number of holes may be drilled to the exact depth to which the gauge is set, without the need or trouble of measuring them; and this enables a boy to do the work that otherwise might require a skilled workman.

Upright drills have advantages that are bringing them into general use in machine-shops, and in wood-working shops. They occupy little room; the oil or other lubricant is sure to follow the drill, so that they may be run fast without heating; the weight—in this drill—insures a constant and safe feed, and thus turns out more work than is done by hand-feed; the weight of the vertical parts cause no friction; and the drill is instantly removed from and returned to its work by moving the left hand.

Drills on this patent, worked by power and by hand, are used by many machinists, horse-railway and omnibus companies, wagon and carriage makers, foundrymen, ship-smiths, iron railing makers, and many other manufacturers in the East. Address Lyon & Isaacs, Box 5,475, P. O., New York.

**NEW BUSINESS FIRM.**—The Messrs. Macdonald Bros., proprietors of Chace's sawing and planing mills, have consolidated in business at their old stand, with Mr. J. McGill, and H. Chapman, sash, door and blind manufacturers, under the new firm name of D. A. Macdonald & Co. For over ten years the Macdonald Bros. have been connected with the business of Chace's mill. All the partners are pioneers in their respective branches of business, thoroughly conversant with the practical work of their trades,

and know well the wants of this progressive field of industry. A new two story building will be immediately added to their works, fronting forty-four feet on Market street, and eighty-five in depth. We know this firm to be composed of most estimable men, and are pleased to note their progress and business success.



LYON & ISAAC'S SELF-FEEDING DRILL.

as to be able to feed a drill fast enough without breaking it. It was patented by Lyon & Isaacs, 9 Jane street, N. Y., in 1865, and described in the *American Artisan* of May 9th, 1866, as follows: The feed is forced by the weight of the fly-wheel, A, on the drill arbor, L; and when drilling small holes, for which the weight of the wheel would be too great, a counterweight is put upon the

lever, C, is linked to a pivot joint, B, on the top of the drill-arbor, so that it may lift it from its work, or sustain part of its weight while it is at work. The hand-rod, F, by which the first lever, D, is worked, has on its lower end a hook, which hooks into the staple, G, when the drill is to be held up clear of the work-table, H, while the work is being adjusted. The work-table can be



(Written for the Mining and Scientific Press.)

## Plumbago--Graphite--Black Lead.

BY DR. L. LANSZWEERT.

MESSEURS. EDITORS:—As much has been said, of late, about gold, silver, etc., I have thought it might not be out of place to call the attention of your readers to some facts with regard to the mineral whose synonyms are placed at the head of this article—giving a brief detail of the constitution, properties, methods of application and economical values of this remarkable substance. Especially may this be appropriate at the present time, from the fact that a great abundance of this mineral (and that of a very good quality) is being found in various localities on this coast, for which, as yet, we have found no application; although we are constantly importing the manufactured article in large quantities. This surely ought not to be. It should be the study of Californians to convert, so far as practicable, into useful products, all the crude material found within their borders.

## THE CHEMICAL CONSTITUTION OF GRAPHITE.

Graphite, plumbago and black lead, are so many synonyms for one and the same mineral. It was formerly supposed that graphite was a carburet of iron; but according to Berselius and other chemists, it is a peculiar form of carbon, and the foreign substances which it contains are held in a state of mechanical mixture merely, and not in chemical combination. It occurs both crystallized and massive, but chiefly in irregular nodules, and is found in various parts of the world. That found at Borrowdale, in Cumberland, England, is of the best quality yet found native, and is chiefly employed in the manufacture of lead pencils. The Siberian plumbago differs considerably from that found in Borrowdale, inasmuch as it is almost impossible to erase the marks made by it on paper, by the use of india-rubber. That which is imported from the East Indies is remarkably soft. That employed in the manufacture of crucibles, for anti-friction purposes, for protecting iron from rust, for stove polish, etc., is of the more common and impure varieties. About the same quality of this substance is also employed for glazing gun and mining powder, and for electrical conductors.

## RELATION OF GRAPHITE TO THE DIAMOND AND CHARCOAL.

The density and molecular structure of graphite places it between the two principal forms of carbon—the diamond and charcoal; the density of the former being 3.55; that of the latter 1.57, while that of graphite is 2.27.

The diamond is always crystallized—charcoal always amorphous. Graphite is ordinarily crystallized and foliated, but sometimes amorphous. The fundamental identity of the diamond, graphite and charcoal, or amorphous carbon, has been fully demonstrated by the analogy of their products when subjected to combustion in oxygen. Although very different in appearance, and, considering only their more or less facility of combustion, they yield both the oxygenaceous compounds—i. e. oxide of carbon or carbonic acid, according to the quantity of oxygen furnished them.

The remarkable differences in the physical properties of these substances, which are essentially identical in nature, constitutes one of the most curious facts in chemistry. *Diamond* is believed to be the hardest substance in nature; it is transparent, extremely refractive, and a non-conductor of electricity. *Charcoal*, even in its hardest form, is comparatively fragile, friable and directly opposite to the diamond in its relations to light and electricity—intercepting completely the first, and conducting readily the latter. *Graphite*, like charcoal, differs from the diamond in its lack of hardness, its friability, opacity, and conducting power for electricity. Notwithstanding this partial analogy between graphite and charcoal, the former differs materially from the latter in its greasy feeling, metallic luster and peculiar dark, steel-gray color.

The strong line of demarkation between the diamond and graphite, on one side, and graphite and charcoal on the other, are lessened or effaced in certain substances presenting characteristics intermediate between the two. Thus, notwithstanding however great may be the distance which separates the normal diamond from graphite, that distance is far more less appreciable, when we compare the less pure varieties of diamond with the more pure specimens of graphite. For instance, we find diamonds of a dark gray, semi-opaque, without luster, and giving, when burnt, 0.05 to 0.15 of ashes. (Dumas & Stass, Erdmann & Marchand.) The purest graphite leaves only 0.33 of ashes, (Fuchs) and sometimes assumes an hexagonal crystallization, as found in some specimens at Bayeros, in Brazil, and which,

according to Karsten, gives them the appearance of diamonds, in a certain state of degradation. Deposits of native graphite have been found in New Brunswick, and other localities, which, by character and aspect, resemble anthracite, and show, very imperfectly, the metallic luster and characteristic color of normal graphite! We sometimes find similar deposits of carbon in the form of scales, in the interior of gas retorts, which present the intermediate characteristics between graphite and amorphous mineral coal.

The existence of these bodies, which serve as transition between diamond and graphite, and between the latter and charcoal, taken in connection with the fact that they can be converted into a common product—carbonic acid gas—has naturally led chemists to ask the following questions:

Is it not possible to convert, reciprocally, these substances, the one into the other?

Cannot amorphous charcoal be artificially transformed into graphite, or converted into diamond?

The solution of the above questions has been affirmatively resolved as to graphite; but negatively, till now, as to diamond.

[To be Continued.]

[Written for the Mining and Scientific Press.]

## Earthquake Phenomena.

The most impressive phenomenon of an earthquake is the vibration, rising and falling, or wave-like movement of the surface of the earth, which may be felt over a surface more or less extensive. From this vibration comes the name—Earthquake. Writers, not a few, have conjectured the cause, but no one has yet, so far as we know, furnished a solution entirely satisfactory, nor do we assume to do so at present; but having some sympathy with the almost universal interest felt in the subject, we subjoin a few loose thoughts which have crossed our mind since the last "shake" that visited our city. We read statements that some earthquakes are preceded, and that others are accompanied by a low rumbling sound, like distant thunder; others are preceded by excessive heat and an oppressive state of the atmosphere. All are attended, more or less, by exhibitions of electricity. Now, if we can find a cause sufficiently powerful to produce the movement of the earth, we shall have no difficulty in accounting for the concomitants, sound, heat, and electricity.

There are reasons for believing that the causes of earthquakes may be much less powerful than is generally supposed. As already remarked, earthquakes are vibrations of the surface of the earth, either in a vertical or horizontal plane, or possibly, sometimes, a combination of both these movements. Allow us to cite a few examples to show that, under favorable conditions, either of these vibrations may be easily produced with a comparatively small expenditure of power. A stone weighing a few pounds, or even a few ounces, thrown into a smooth and quiet pond, or small lake, will send waves—vibrations—from center to circumference. A small dog, trotting over a long bridge, gives vibration to the whole structure, although it may weigh hundreds of tons. A blow given by a strong man with the head of an ax on one of the "big trees" of Calaveras, will make it vibrate to the topmost branch. A water-cart, or even an apple-cart, driven over the cobble-stone streets of San Francisco, will give vibrations felt in every brick house on both sides of the street, and how much farther we cannot tell; but we doubt whether the altitude of a star could be taken with an artificial horizon of mercury on the top of Clay street hill, while a heavy load was being driven along either Kearny or Stockton, from California to Jackson streets.

Herein is seen the wisdom of the City Fathers (so little appreciated by the vulgar), in adhering to cobble-stone pavements. To say nothing of keeping up the demand for horses, by this means they keep the people so educated to sham earthquakes, that a real one, unless it shake too hard, will be scarcely noticed.

There is one other species of vibration which ought to be mentioned—that of a long rope or wire, or even a long bar of iron. Let a long rope be strained ever so taut, and with the top of a pencil or a snap of a finger, one can send a vibration the whole length of it, which will speedily return to him. The shifting backstay of a ship, over an inch in diameter, and over a hundred feet in length, gives a good opportunity for the experiment. Any one who will take the pains to try this, will see that it illustrates the earthquakes of San Francisco with a good degree of correspondence. If the rope be drawn taut on the surface of still water, and both ends firmly fastened, the illustration will still more nearly correspond to the phenomena of an earthquake, for the resistance and friction of the water will bring

the rope more speedily to a state of rest, and the return vibrations will be much less numerous.

Fortunately for us, the earth, upon which our houses are built, does not possess the property of vibration to so great a degree as is exhibited in any of the instances above named; but still it has that property in a much greater degree than many suppose. All its pores and cavities are filled with either air or water, or some elastic gas, and either of these will transmit motion to a long distance. Of this fact there are numerous examples.

In the State of Illinois there is a spot called the "Shaking Prairie," so named from the fact that by jumping on the ground, vibrations of the surface extending many rods can be easily produced—in fact, an earthquake in miniature. In this case, doubtless, there is only a thin stratum of soil and turf over a substratum of soft mud and water. We have been in swampy places covered with a thick growth of timber, where, by jumping on the outspreading roots of a tree, one could set all the trees in sight to vibrating. Here, again, on a small scale, were all the essentials of an earthquake.

From the foregoing facts it will be seen that if the proper conditions are supplied, an earthquake may be inaugurated without any terribly great or powerful producing cause. If the Mammoth Cave of Kentucky were filled with water, as it naturally would be if below the sea level, a few pounds of powder or any other explosive material let off in its center, would make an earthquake as extensive, certainly, as the surface of the cave. It is only required that a small portion of the upper stratum of the earth be raised (gradually it may be), and allowed suddenly to fall back, or that a fissure be opened between two strata of rock, and permitted to close again at once, in order to set things in violent motion. In the former case the wave of vibration would naturally radiate from the point of upheaval as a center, and gradually diminish and die out in the distance. In the latter instance we should expect the wave at right angles to the strike, or antinodal axis of the strata. We know of but two means by which such movement and sudden recoil could be effected: First, the explosion, or gradual formation and sudden escape of gases, generated by chemical agency; or, second, the explosion of steam, formed deep in the earth and heated by chemical action, until its tension was sufficient to burst the rocky boiler and open a passage for itself to cooler quarters, where it would instantly condense and allow the rocks and earth to fall back to their original position. It is not necessary that the gases or steam should be generated suddenly. The process of generation may go on for a long period in deep subterranean caves, before they accumulate the power requisite to produce an earthquake by their own instantaneous liberation.

No doubt gases arising from chemical changes, deep in the earth, often escape gradually, to some extent, before the quantity is sufficient to effect any thing of consequence, and it is from this that the "premonitions" arise which sometimes pass away without being followed by a catastrophe. The rumbling sounds sometimes heard in the vicinity of volcanoes may be produced by electric discharges, the same as thunder; but they are more likely the result of the explosion of gases, in small quantities, issuing from a crevice in the vicinity of a subterranean fire, to which the air has access, and with which air the gases commingle and then explode. In this manner, doubtless, the power that would have produced an earthquake, if all expended at once, is sometimes let off gradually and harmlessly, so that only premonitions are given, without being followed by the dreaded sequence.

From the rapid increase of the tension of steam at high temperatures, we are led to think that at about 1,500° it would be sufficient to raise the crust of the earth about half a mile in depth. Much, of course, would depend upon whether the superimposed strata were clay, sand or rock, so that no general exact data can be given.

Few persons who have not studied the subject carefully have any correct idea of the immense power of heat communicated to water under confinement. One pound of water raised through one degree of Fahrenheit, gives a mechanical equivalent of one pound weight, raised through 772 feet, or 772 pounds raised one foot high. The consumption of one pound of coal will raise the temperature of 13,000 pounds of water through one degree, from which it will be seen that the heat generated by the combustion of one pound of coal, if communicated to water, would exert a lifting power sufficient to raise over ten millions of pounds one foot high.

One pound of hydrogen gas combining with eight pounds of oxygen to form water,

develops heat sufficient to raise over thirty-two millions of pounds one foot high. These data drawn from actual experiments, carefully conducted, give us an idea sufficient for our present purpose of the tremendous power in Nature's laboratory. We might go farther, by way of conjecture, to show precisely how earthquakes are produced, and even give directions for getting up one artificially, but we forbear, lest some college students should take the hint, and on some dark night shake us all out of our quiet slumbers for their own amusement.

By a reference to well established principles, we can easily account for any exhibitions of heat or electricity that may accompany an earthquake. Motion, like matter, is indestructible. Matter may undergo a thousand transformations, and in many of them become invisible to the eye, and yet lose none of its essentials. So motion may take various forms and still retain, potentially, its original energy. Sound, like heat and electricity, are merely modifications of motion. If a moving body be brought to a state of rest, all that part of its motion which is not, in some form, transferred to some other body, will be converted into either sound, light, heat or electricity, either of which, according to the circumstances, may preponderate and become more clearly manifest. Again, under proper conditions, light, heat, and electricity are capable of conversion or transformation, the one into the other. If two ivory balls be suspended side by side, and then one of them drawn aside and let fall against the other, we get a good illustration for our purpose. If the balls weigh each one pound, and one be raised one foot high, it will then have a "one-foot pound of power" at its disposal, and should be able to knock the other ball a foot high. But it cannot do this, for, in falling, it moves the air out of its path, and to effect this it expends the first portion of its power; then, upon striking the other ball, it makes a noise which reports a second portion of power expended; again, by impact, heat is developed which uses up a third fraction of force, and whether electricity is developed or not, we cannot say with certainty, but suspect there is, and if so, that would dissipate a fourth fraction of the "one-foot pound," leaving the remainder to be transferred, as motion, to the second ball, provided both balls were perfectly elastic; but if any permanent change were effected in the balls by the concussion, then another portion of force would be consumed equivalent to it, and less still transferred, as motion, to the second ball, which will not rise so high as the first was carried, before it will return and repeat the operations of the first on a diminished scale, and thus each, alternately, will operate until the "one-foot pound of power" which was communicated to the first ball by the hand has been all expended upon the air, or transformed into sound, heat or electricity, after which the ball will come to a state of rest. This illustration shows what is essentially true in every case where matter in motion is brought to a state of rest. Pure water is of such a nature, that by moving upon itself only, it produces very little of either sound, light, heat or electricity, consequently its waves run for a long distance until they find some other body upon which to expend their energies and divest themselves of the power that put them in motion.

A few years since, a wave started by an earthquake from Simoda, Japan, traveled across the Pacific, and expended its power along the western coast of America. Much of its power had, doubtless, been expended upon the intervening islands and inequalities of the ocean bed, as well as in the friction of the water upon itself for some five thousand miles; but still, after making these deductions, it retained power sufficient to report itself and make known by its presence that something unusual had somewhere occurred.

Earthquake shocks do not often travel to places distant from their origin, nor do they continue for a long period, simply because the friction produced in the earth by the grinding of its solid materials upon each other transmutates the moving power, as motion, into power, as heat, sound and electricity. An earthquake, once inaugurated, can subside only by effecting permanent changes in the earth itself, or by thus transmutating the moving power.

That portion of the power which is transformed to heat is seldom observed, for, if compared with the heat of the sun, its quantity would be insignificant; but the electricity being unusual, is more noticeable. It often precedes the shock of an earthquake, because the electricity, developed by the first shock at the origin, will be felt instantly at a long distance, while the shock itself, or rather vibration or wave, takes time to travel and transmit itself in the solid material of the earth.

D. V.



## Mechanical.

## A New Superheating Apparatus.

We have more than once alluded to the difficulties attendant upon regulating the heat of superheated steam, as constituting one of the chief obstructions in the way of a practical application of that agent. It is no doubt the grand difficulty in the way of the introduction of Danforth's, or any other similar steam generator. The hindrances in the way of employing steam at a temperature exceeding 350° Fah., in fact, never can be overcome until we can make joints steam-tight, without oil or any other than perfectly clean metallic packing. Every engineer knows, that if steam, of a higher temperature than that above indicated, is allowed to enter a cylinder, the cylinder immediately becomes perfectly dry, the oil is decomposed so as to become absolutely useless as a lubricator, friction is induced and the piston-head begins to cut out the cylinder. There is no way to get round this as long as it is made a necessity to use steam at such a high temperature. Engineers have endeavored to so regulate the temperature of the superheated steam as to keep it below the destructive figure mentioned; but hitherto without avail, unless the recently devised apparatus of Mr. Wyatt Reid, a consulting engineer at 104 Pearl street, New York, has accomplished the desired end.

The *American Artisan* of January 2d, gives an illustrated description of Mr. Reid's device, which may be substantially described as follows: Suppose a boiler set in the usual manner; in the chimney flue, just where the flames leave the boiler, set a small cylinder, pierced with tubes, placed and secured like those in a tubular boiler—this is the superheater. Now make two connections between this and the boiler—the upper one with the steam chamber of the boiler; the lower one with any suitable coil of pipe placed below the water level in the boiler. Let the opposite end of this coil of pipe pass through the walls of the boiler into the steam chest.

Now, when steam is raised in the boiler, it will pass through the steam-connecting pipe into the superheater, where it takes up the waste heat of the flue, and becomes superheated. It then passes from the superheater through the coil placed within the bottom of the boiler, where it will part with its excess of heat, by radiation, through the walls of the pipe into the water—thus utilizing the waste heat of the furnace. The steam will finally present itself at the steam-chest, at the temperature due to the pressure only, and not at a destructively high and unknown temperature, as has hitherto been the case in the use of superheated steam.

According to the *Artisan*, tests made with this apparatus show a saving of thirteen per cent. in fuel. And as the steam never leaves the pipe and heater after entering them until it enters the cylinder, all the advantages of dry steam is gained, without a destructive superheating.

This arrangement may be attached to almost any boiler; or if it is not convenient to attach to the regular boiler, a small extra one may be added, with a coil, to extract the superheat. The invention has all the appearance of being a useful one. We shall watch it and report progress.

**STRENGTH OF IRON UNDER DIFFERENT CONDITIONS.**—During some experiments made by the United States Board of Ordnance, under the direction of Major Wade, it was ascertained that a gun, burst with hydrostatic pressure, showed only about one-third of the strength exhibited under direct tensile strain in a testing machine. Among many similar results, a gun burst with a pressure of 9,000 pounds per square inch of resisting metal, whereas a sample bar of the same iron bore 27,350 pounds per square inch before breaking.

The minimum pull on the trigger, in discharging an Enfield rifle, is six pounds.

**THE BREAKAGE OF STEAMBOAT SHAFTS, ETC.**—A recent article in the *Scientific American* professes to find the cause of the frequent breakage of the shafts and cranks of ocean steamers, in the fact that they are generally made of scrap iron. The article concludes as follows: "From the examination we have given this subject, we are of the opinion that the only reliable and safe course for our forge-masters to pursue, is to make their forging of one kind of iron. Let them test the various brands of foreign and American irons, and use only the strongest and most tenacious that can be procured; and we feel confident that we shall hear no more of broken steamer shafts, endangering a loss of life and property." A Western exchange, in noticing this article, claims for the Lake Superior iron the superiority—evil to him who evilly thinks this a pun—over all other brands in strength and tenacity. It says: "We have seen with our own eyes an inch square bar of Lake Superior iron bent double and hammered down at the bend, when perfectly cold, without even presenting a fibrous or abraded appearance, but drawing perfectly smooth and as bright as polished tin over the curve. We have also seen an inch-and-a-half round bar, having a solid head forged on each end, drawn out by a tractile force like a stick of soft wax, until it was about an inch in diameter in the center, without a sign of parting, or the tearing of any fibers, or the appearance known as 'brooming,' but the portion drawn out remained smooth and became as bright as a mirror." The common impression that this iron is too soft for use as shafting, we are assured, is quite unfounded. Though tenacious and ductile, it is not extremely flexible, and can be tempered to a great rigidity. The subject is certainly worth the attention of forge-masters, and scientific men generally will be interested in its discussion.

**PLASTIC SLATE ROOFING, FIRE-PROOF.** The American Institute of New York speaks very highly of the recently introduced "plastic slate roofing," to which frequent allusion has been made in this paper. A sample of this roofing was recently exhibited to the Institute by J. M. Allen, of New York, one of the officers of the company, to prove that it was fire-proof. It was taken from a building which had been burned. In presenting it, Mr. Allen said:

"You will perceive it is neither consumed, charred, nor weakened. It was a soft mastic when the building took fire. Now it is solid, strong and thoroughly petrified. The roof was upon a wooden lean-to against a brick building. It was so perfectly fire-proof, and so tightly joined to the brick, that it prevented the smoke rising to blacken the wall above the junction. The superheated steam and air could find no egress. The room was filled with most inflammable material, yet with all the fire and heat none could escape through the roof. It hardened and stood until all support was burned away; when it fell it broke into large sheets several feet square. The owner of the adjoining building said it held the fire in, so tight, as to force it through a small hole into the brick building.

"This burning has therefore proved plastic slate, fire-proof. You will perceive, however, that the heat created gas in the soft substance, which made it somewhat cellular, though hard and strong when cold. If the supports of the roof had been of iron, the slate would have remained and formed a roof after the boards were burned away. This fire has proved that if wood floors were coated on the under side with plastic slate, it would prevent fire from getting up through them. We are now satisfied that we can make felt so stuffed with slate that it can be used as a perfect fire-proof screen, either for roofs or for any other situation."

**EFFECT OF THE ATMOSPHERE ON LONG PROJECTILES.**—Sir W. Armstrong has declared that, at low elevations, a long projectile, fired from a rifled gun, attains a greater range in a resisting atmosphere than in *vacuo*. The increased range he attributes to the buoyant property of the air. It is contended by some experimenters that the resistance of the air to a spherical shot is due to the whole disk of the shot projected as a flat surface against the air, while others insist that the resistance of a sphere, in such a case, is only one-half that of a flat-fronted shot of the same diameter.

**CAST-IRON GUNS**, cast from the same metal, have been found to withstand harder service when kept for a few years, or even a few months, before testing, than when fired while new.

## Scientific Miscellany.

## The Forest Trees of Australia--Valuable Oils.

There are about 120 known and determined species of forest trees in Australia; but among them all there is not a single member of the pine family. Pine, for inside finish for houses, etc., is chiefly imported from Oregon. One of the most valuable species of the forest trees of Australia is known as the gum tree, *eucalypti*, of which there are quite a number of varieties; some of which attain the extraordinary height of 300 feet. The gum or oil, and bark of this tree is very valuable; the latter for fencing stuff. The wood of the tree is not of much value.

One variety of this tree, the *eucalyptus amygdales*, yields large quantities of an essential oil, which, when its properties become more fully known, will no doubt prove of much commercial importance. It is said that 130 pounds of freshly gathered leaves from this tree, with the little branchlets to which they are attached, yields upwards of three pints of oil. The oil is a thin, transparent, yellow fluid, having a pungent odor something like the oil of lemon, but coarser and stronger; its taste is mild and cooling, producing an after sensation in the mouth resembling that of camphor. Its specific gravity at 60° F. is 0.881; its boiling point 300°. It is somewhat less volatile than turpentine. Like other essential oils, it leaves no stain on paper. It absorbs oxygen quite freely when properly exposed; producing thereby a residual resinous matter.

When brought in contact with iodine, at a slight increase of temperature, a dark-colored solution is produced, which, when heated, emits a peculiarly variegated vapor, in which the yellow, red, violet, green and blue colors are beautifully visible, especially in the sun light.

The oil is soluble in turpentine, in fat, and drying oils, in benzine, naphtha, ether, chloroform and absolute alcohol. It dissolves camphor, resin, gum Damara, copal, shellac, caoutchouc; but gutta percha, though digested in it for several days, remains unaltered. This oil may be considered the type of about twenty oils from Australian forest leaves, which are suitable for general application in the arts. Their properties would, no doubt, form an interesting and profitable study for the chemist. The trees bearing leaves from which essential oils may be extracted, constitute the great bulk of Australian forest vegetation. The oil of the one described above, exists ready formed in the leaves; the cells of which containing it may be seen in great numbers on holding them up to the sun or any other bright light.

COUNT RUMFORD has shown that all inflammable bodies may be extinguished by cooling agency. Even the explosion of gunpowder may be thus arrested, and its incipient inflammation extinguished by directing on it a strong blast of air. The force of the explosion of gunpowder is greatly increased when the powder is previously heated nearly to its point of decomposition. This may partially account for the bursting of guns after long firing. If fulminating mercury be laid upon a heavy block of iron and exploded, it will indent the iron. When exploded upon a thin plate of iron, like a fire shovel, for instance, it will often make an opening quite through it.

**WHITE LEAD AND SALTPETER.**—Clarence Delafeld, of Staten Island, has patented a process for manufacturing carbonate of lead. He claims his product is whiter and purer than can be produced by the old Dutch process. It consists in mixing a hot solution of nitrate of lead with a hot solution of carbonate of potash, and passing into the mixture superheated steam, which, it is claimed, prevents the formation of hydrated oxide of lead, and by this peculiar manipulation the whole is changed to carbonate of lead. After the salts of lead have been precipitated, the remaining solution of nitrate of potash is drawn off and evaporated, thus leaving very pure crystals of saltpeter.

**CONDENSING FRUIT—A NEW PRODUCT.**—This is a new method of preparing fruit, devised by a Mr. Borden; whether patented or not, we do not know. The juice of any kind of fruit which has been extracted, as for cider or wine, is immediately put into an air-tight condenser and boiled, by steam *in vacuo*. No sugar need be added. When the water of the juice is evaporated, and the residual substance cooled, it constitutes a perfect jelly, having the flavor of the original fruit, without any cooked taste. It is a business that cannot be conducted upon a very small scale; but a manufactory might be established in any extensive fruit growing neighborhood, greatly to the advantage, we should suppose, of both the grower and manufacturer.

The product must certainly be most palatable and desirable, as will readily occur to any one who will carefully consider the process. The great objection to jellies, etc., as ordinarily made, is the fact that the flavor of the fruit is destroyed by sugar and heat. Evaporation *in vacuo* allows the boiling to be done at a temperature much below the ordinary boiling point. Would it not be well for some of our large fruit growers in the neighborhood of San Jose, to look into this matter. We will volunteer to obtain all needed information for any party who may feel inclined to go into the operation. The chief machinery requisite would be a small steam generator and a suitable evaporating pan, similar to those used by sugar refineries.

The ignition of powder by the electric spark is greatly facilitated by mixing with the powder, in contact with the poles of the battery, a small quantity of chloride of potash and sulphide of antimony—composed of two parts of the former to one part of the latter. The smallest spark of induced electricity is sufficient to ignite such a mixture.

**LIGHTNING ROD PROTECTION.**—In the late proceedings of the American Institute of New York, a prominent member remarked that we frequently see published positive statements of buildings being struck with lightning and consumed, which were provided with lightning rods. The lightning rod theorists say it is because they were not perfectly adjusted. We say we do not believe any one was ever adjusted so as to be able to draw the lightning ten feet out of its course and carry it safely to the earth. They do conduct electricity; they do not, in our opinion, conduct what are called thunderbolts. If any one can devise a proper method of settling this question, we should be extremely glad to publish the truth for the benefit of our readers. We are ready to yield to facts, but cannot give up reason for theory, however old it may be.

**FOOD FOR PLANTS.**—A distinguished Russian chemist gives the following receipt, as affording one of the best preparations as a food for plants: Take ground bones, 40 parts; wood ashes, 40 parts; newly made lime, 6 parts, and wet with water enough to thoroughly mix the whole.

**MODEL ENGINE.**—H. J. Pepper, of Stockton, has made, says the *Independent*, a very beautiful and perfect miniature steam engine. The engine stroke is 1½ inch and three-eighths of an inch bore. The boiler is upright, made of copper, and holds a little more than a gill of water. The balance wheel is four or five inches in diameter. Steam can, by a spirit lamp, be generated in about four minutes, so as to supply sufficient motion to drive a sewing machine. The machine, including smoke stack, stands about eight inches high, and the whole will probably weigh eight or nine pounds.

**OIL.**—Most of the oil companies in Venango county, Pennsylvania, the great center of oildom, have been sold out at sheriff's sale. A few men, who were "cute," sold out early and made money; but most of those who became suddenly rich "in oil" are no better off than when they commenced. The business is now being conducted in more legitimate style than before, and is probably be, when systematized, a safe and lucrative pursuit.



## New Patents and Inventions.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to Inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

The device for picking cotton by machinery, recently invented and tried upon the grounds of Dr. Thomas, near Memphis, is described as follows by the *Appeal*:

The machine is based on the wagon principle, having two wheels which move the machinery, consisting of two cylinders of brushes in the front, one at the back, and a cylinder of fine teeth in the center, with a receptacle at the back holding from 300 to 400 pounds of the cotton with the seed as picked. The machine is made to take two rows, the animal pulling it passing between the rows, and the driver seated high above the entire works. We saw the machine work, and though we discovered it still lacked many qualities which will have to be added, we feel sure it will in time be a success, and yet crown the inventor with glory.

**IMPROVEMENT IN HORSE-SHOEING.**—A new invention is now coming extensively into use in Boston, which bids fair to be of great use to tender-footed horses. It is also said to be such a relief to all horses working upon pavements that the city railroads of Boston are adopting the improvement extensively. It is a cushion of india-rubber placed between the shoe and hoof, both cushion and shoe being fastened by the same nails. It is said to be not only a preventive of dirt and gravel getting under the shoe, but entirely prevents horses from baulking, and that the shoes will hold on firmer and longer with than without the cushion.

**A MINING INVENTION.**—The Stockton *In.* dependent alludes to and describes a late mining invention as follows:

E. R. Chapin, of Sonora, has recently invented a very ingenious contrivance for saving gold lost from quartz mills, and which he terms a "Concentrator and Separator." The model which he intends to send on to Washington, in hopes of getting out a patent for his invention, could easily be placed in a person's coat pocket. It is entirely different from any separator or concentrator that we have seen used by quartz miners. A shallow pan, called the separator, elevated an inch above the concentrator, first receives the water sediment, quicksilver and gold escaping from the mill above. The bottom of the separator being deeper than the sides or mouth where the water flows over, the quicksilver and gold naturally settles down, while the light sands and sulphurets flow over with the water into the concentrator, which looks somewhat in shape like the shallow top of a soup tureen. Small holes are perforated in the bottom of this concentrator, through which the sulphurets pass into small pans fastened beneath, while everything flows over the top into the concentrator, which convey it away. The whole machine is suspended on four stout wires, each fastened at the bottom in a strong framework. Diminutive cog-wheels attached to a cylinder, which is kept in motion by the action of the mill above, sets the machine in motion, and gives both the separator and concentrator the same motion as that of a child's cradle when rocked gently.

**A RAILWAY INVENTION.**—An invention has been provisionally specified by a London artisan, which consists in so connecting the bodies of railway carriages to the under frame-work, that, in case of a collision, the two will be separated by the breaking of a bolt. By this means, the shock which passengers receive is broken. The body of the carriage slides forward in grooves on the frame-work, and thus is much less likely to be demolished than if the check was more abrupt.

**BROWN'S FILTERING HEATER.**—Some mode for preventing incrustation for boilers, caused by lime and other impurities in water, has long been a desideratum. We have just witnessed a combined heater and filter at the San Francisco Foundry, intended to subserve this purpose. It may be made of either wood or iron, the water being conducted through a pipe the full length of the filter, thence returned through a trough—subjected in its passage to and fro to the action of exhausted steam. The amount of sediment deposited is the best evidence of its efficiency. Some of the advantages claimed for it may be found in the advertisement which appears to-day.

## List of Officers of Corporations and Mining Companies.

[PUBLISHED IN THE FIRST ISSUE OF EACH MONTH.]

(Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona-fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.)

**GOULD & CURRY G. & S. M. Co.**—Dec. 17. Trustees: Alpheus Bull, H. B. Williams, John O. Earl, A. Seligman, Lewis Cunningham, B. F. Sherwood, R. H. Pearson. President, Alpheus Bull; Secretary, David Bowie; Treasurer, Wm. C. Ralston; Superintendent, Louis Janin, Jr.

**KOLER BROS. S. M. Co.**—January 14. Trustees: Stephen Otis, B. L. Brandt, J. S. Pollack, W. Fishel, O. A. Chase, Dr. R. P. Chase, J. W. Felt, J. Naphtaly, Geo. J. S. Hyams. President, Stephen Otis; Secretary, R. Wegener; Treasurer, Geo. J. S. Hyams; Superintendent, W. V. Roberts.

**SIERRA NEVADA M. Co.**—January 14. Trustees: Thomas H. Holt, Robert Apple, Henry Cutcher, C. F. Fargo. President, T. H. Holt; Secretary, John M. Burnett; Superintendent, Robert Apple.

## RECENT INCORPORATIONS.

**PIONEER PETROLEUM REFINING Co.**—San Francisco. —Capital stock, \$50,000; 50 shares; \$1,000 per share. Trustees: Chas. Scott, David Hunter, Charles H. Wakelee. January 24.

**UNIVERSITY HOMESTEAD ASSOCIATION.**—Capital stock, \$120,000; 400 shares; \$315 per share. Trustees: George B. Taylor, L. L. Robinson, E. Thomas, D. D. Thomas, B. Lewis, H. A. Gorley.

## Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

131. From R. O. Margery, of Boise City, Idaho—silver ore from the Morning Star mine, Owyhee. The specimen before us contains considerable blue carbonate of copper.

132. Calamine, a silicious oxide of zinc, in crystalline crusts, on lead ore. This specimen is from the Arizona Consolidated Mining Company's mine on the Carmel lode, Eureka district, Arizona Territory. The principal ore of this mine is an argenteiferous galena, which assays an average of \$83 to the ton in silver, and 60 per cent of lead.

**SUTRO TUNNEL.**—The Nevada Legislative Committee on Federal Relations, have reported on the "Joint Memorial and Resolutions, asking Government to aid in the construction of the Suto Tunnel," and recommend its passage. With it, and as a part of it, they submitted a long and elaborate report, the object of which is to show the importance of the proposed tunnel, as the means of largely increasing the world's stock of precious metals, and its consequent bearing upon the future of the United States, and the payment of the National debt.

"HIPPOGRAPHY," says the *Times*, "is making rapid progress in Paris." Divers other papers throughout the State, echo the same. Verily, this is a new kind of "writing!" Perhaps they mean hippography? There are in that city seven markets for the sale of horse flesh. Forty thousand pounds per week is disposed of, at from seven to nine cents per pound.

**GASTRONOMIC DELICACIES.**—Seven hundred and fifty thousand oysters are consumed daily in Paris, not to mention one hundred thousand snails. Frogs are at a discount of late.

**NEVADA.**—On the 23d January, the snow was from ten to thirty feet deep on the Summit of the Sierra, and rapidly increasing in depth.

**THE Oakland Last Factory** makes, it is said, a superior article to that imported. The laurel timber used is from Russian River.

Work has been resumed on the Buchanan Hollow copper mine, in Fresno county. The prospects are said to be good.

## WEEKLY STOCK CIRCULAR

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING, February 2, 1867.

## CITY STOCKS.

During the week under review sales of the following shares were effected: California Steam Navigation Co. at 59½@60 ¾ cent.; S. F. Gas Co. at \$65 per share; Pacific Ins. Co. at \$158; Fireman's Fund, \$10.50, and National, \$77.

We call the attention of our readers to the following

*Annual Statement of the Insurance Companies of San Francisco for the year 1866:*

Remarks.	Will increase capital to \$1,000,000 Feb. 11.	44 ½ ct. quarterly, Jan. 15.	3 ½ ct. Jan. 15.
Disbursements in Dividends.	\$150,000 00	75,000 00	53,828 15
Amount of Risks written during 1866.	\$30,344,358 00	17,992,223 00	8,357,610 00
Amount of Risks in Force December 31st.	\$18,623,269 00	8,206,351 00	7,433,000 00
Total Disbursements.	\$178,253 05	247,227 15	183,151 35
Income.	\$571,079 91	341,048 63	215,044 02
Total Assets.	\$1,218,231 83	892,035 00	631,139 39
Amount Paid in to December 31st.	\$750,000 00	500,000 00	250,000 00
Capital Stock.	\$750,000 00	750,000 00	500,000 00
Name of Company.	Pacific.....	Union.....	Fireman's Fund.....
	Merchants' Mutual.....	Home Mutual.....	California.....
	San Francisco.....	Oakland.....	National.....
	Builders'.....	Totals.....	
	\$5,350,000 00	\$4,407,619 90	\$1,241,892 31

\* In United States securities. † Three months in operation.

## MINING, SHARE MARKET.

The depression incident to the market last week continued to prevail until Thursday, since which time a much better feeling has been exhibited, with a decided rally in nearly all stocks. The impassable condition of the roads leading to the mills still operates as a barrier to active operations, and large piles of ore have accumulated at many of the mines.

**HALE & NORCROSS**—remains in firm hands; no sales transpired since our last reference. Early in the week \$2,000 per foot was bid. No change to note in the condition of the mine. The average production of bullion per ton is fully as large as during the closing months of 1866.

**SAVAGE**—declined from previous quotations, early in the week, opening at \$1,785, steadily falling to \$1,590, then rallying to \$1,770, and closing yesterday at \$1,930. The ore taken from this mine during the week ending January 26th, amounted to 1,575 tons, valued at \$54,402, equal to \$35.17 per ton; previous week the yield was 1,745 tons, showing an assay value of \$61.812. This supply of 1,575 tons came from the following sections of the mine: fifth station, 113 tons; sixth, 355 tons; seventh, 410 tons, and from the Curtis shaft, 697 tons. All the information we can obtain regarding the present condition of this mine is very favorable, and in itself, it is thought, does not warrant the recent marked decline

of this stock. On account of the impossibility to clear the old dump from the accumulated ore during some three days of the week under review, not more than half the usual number of men were employed in the mine. The roads continue in a bad condition.

**CROWN POINT**—also receded from closing price of last week, selling at \$1,000, dropping to \$900, improving again to \$1,000 and \$1,050, and at the close \$1,100 is asked. The amount of ore taken from the mine during the week ending January 25th, was 754 tons; previous week, 871 tons. It is said that the south drift on the 400-foot level shows about three feet of good ore. The shaft from this level has attained a depth of 72 feet. This mine at present shows an average yield of 150 tons of ore per day.

**YELLOW JACKET**—has been quite active under a continued decline, opening at \$690@ \$707.50, then selling at \$630@ \$640, improving to \$672.50, receding to \$560, rallying to \$660, and closing yesterday at \$720. A recent telegram says "the mine looks about the same." At latest dates the mill had stopped running.

**GOULD & CURRY**—met with few sales at a considerable decline, opened at \$540@ \$535, declined to \$500@ \$475, then sold at \$510, and at the close obtained \$500. The ore product of this mine during the month of January amounted to about 3,200 tons, of which 2,500 tons were sent to the Gould & Curry mill, and none to outside reduction works. The bullion returns to the San Francisco office during the same period aggregate \$66,423. The 925-foot level, or 5th station, has been opened about 25 feet.

**CHOLLAR-POTOSI**—opened at \$214, receded to \$205, advanced to \$217, then sold at \$208, and closed at \$221. During the week ending Jan. 26th, 728 tons of ore were sent to custom mills. Fine ore is said to have been recently found under the Blue Wing station, which has been developed to a distance of some 15 feet. The main drift on the first station of the new level has gained a distance of 449 feet to the north. The stope in this drift is said to look well, having already been opened some 18 feet.

**EMPIRE**—sold at \$172.50, then at \$170, and at the close sold at \$172.50. The prospects and business of this company, we learn, continue flattering; the mine yielding an average of 80 to 100 tons of ore per day. Owing to the bad condition of the roads for the past 60 days, the company have not been able to reduce and sell more than half their usual average quantity. The consequent accumulation in their dumps is now over 5,000 tons—equal to three months' average consumption. The new shaft being sunk in connection with the Imperial company is now down 760 feet, and progressing at the rate of about two feet per day. It will soon be the deepest shaft (as it is the largest) in Washoe, and the main dependence of the Gold Hill mines.

**IMPERIAL**—exhibited the least fluctuation of any shares on the list, improving from \$150 to \$156, then selling at \$151@ \$150, closing yesterday at \$160. The three clean-ups of the present month produced about \$60,000 in bullion. This company have a large amount of ore at the Rock Point mill.

**OPHR**—receded from \$157.50 to 143, then sold at \$147, and closed at \$147.50. **BELCHER** fell from \$130 to \$115, and at the close sold at \$125. **CONFIDENCE** declined from \$37.50 to \$33, closing at \$34; and **BULLION** from \$31 to \$24, closing yesterday at \$26.50.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$815,336.

**COPPERSMITH WORK.**—**JAMES MACKEN**, the original coppersmith, having carried on his present business for the past fifteen years in this city, is, as usual, at the old stand, No. 226 Fremont street, near Folsom, busily engaged in turning out all kinds of coppersmith work. He pays particular attention to steamboat, sugar house and distillery work. Repairing promptly attended to.

**SUTRO TUNNEL.**—The Empire company has subscribed \$15,000 to the stock of this company.







## Mining Summary.

THE following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of Jan. 19th: The Northwestern Company, who leased the mine of the Buckeye No. 1 for a term of six years from last April, have succeeded in getting all their stock taken, and will commence operations soon.

The Washington mill has been stopped for a week past, in order to clean up and get the Morning Star ore out of the way and everything in readiness for steady and permanent work on Washington ores. At the mine a competent force is at work in getting out ores, and about next week teams will commence hauling and the mill be set in motion. The ores look fine—assays on an average being from \$50 to \$100 per ton; and it is now thought can be got out in quantities sufficient to keep the mill running day and night.

Capt. Uznay will erect furnaces for the smelting of Morning Star ore. The ore can be worked by mill process, but not at a profit, and pay \$17.50 per ton for it and take it out of the mine. Guido Kustel came here last summer and made careful assays and estimates of the ores of that mine, with the view of taking a half interest in the contract with Capt. Uznay; but his estimates were that \$14 per ton would be an exorbitant price for the ore and take it out of the mine; and that \$17.50 per ton and mine it, would ruin the man who took the contract. If the Morning Star Company consult their interest, they will modify their contract with Uznay, so as to enable him to erect smelting furnaces, as until some profitable mode is discovered for working these ores, the mine is valueless to the stockholders.

A "brick," weighing seventeen ounces, from Morning Star ore, was presented to J. C. Ransom, Superintendent of the mine, and one of forty-two ounces to W. D. Root, the President of the Washington Company.

## Amador County.

From the *Ledger* of Jan. 26th: We are indebted to a friend for the following items from Pine Grove:

The Italian is again under the management of its old proprietors, McLaine and Sorrocco Bros. The mill is running night and day. . . . The Golden Eagle, Vaugh & Co., is yielding as largely as ever before. A ton of ore worked by Thoss, at his sulphuret works on Else Creek, as an experimental test, yielded \$312. Cost of working \$80. . . . The Union, is experimenting very successfully. Three tons of ore, such as pays in the old way \$4 or \$5, was made to pay \$50 per ton. . . . The Paugh mine and mill are going night and day, and the yield continues entirely satisfactory. . . . The Craft mine is now prospected by tunnel over 300 feet in length and some 175 feet in depth. The body of ore is large, varying in thickness of lode from five to fifteen feet. A lot of the ore worked by Ambler, at the Sutter Creek sulphuret mill, a short time since, paid over \$300 per ton. Craft has over 200 tons on hand, but no mill, and cannot get it worked. . . . The New Discovery, of which we spoke week before last, is now prospected twenty feet in depth, and looks more favorable than ever.

The Placer mines are not producing much. Daniel Fake & Co. have had to suspend work on account of water. . . . Lutell, Hawkins & Co.'s claims have paid unusually well this winter. . . . The Bradshaw's, J. F. and Sam., have a fine claim on Marshall Flat, and are said to be taking out lots of gold. . . . Billy Marshall is just getting his hydraulic claim into shape, and after nine years work thinks there is plenty of good ground in his claim to keep him going nine years longer. . . . Tom Cline struck a claim the other day on Marshall's Gulch, and panned out \$35 the first day.

## Calaveras County.

From the *Chronicle* of Jan. 26th: Notwithstanding the bad weather, Hoerchner, Myer & Co. have vigorously prosecuted labor on their claim near Middle Bar. They have run their tunnel a distance of one hundred feet, directly on the lead, and throughout its entire length the quartz prospects finely. The ledge is wide—varying from four to six feet—and the rock all contains gold. Paying quartz enough has been already uncovered to warrant the company in erecting a mill, and we confidently expect to see machinery in operation on their claim early in the Spring.

We were shown this week some fine specimens of gold-bearing quartz rock from the celebrated "Billy Shepherd" claim, near Whisky Slide. Gold was plainly discernible without the aid of a glass. The vein, at

the depth of thirty feet, has developed into a solid ledge of quartz four feet in width, between well-defined walls. It is estimated that the rock, unassorted, as it comes from the shaft, will pay \$20 per ton.

## El Dorado County.

From the *Courier* of January 26th: We saw, the other day, four or five very rich pieces of quartz from the Manning ledge. The specimens looked to be at least half gold, with a sprinkling of sulphurets, and it was estimated that a ton of such rock would be worth at least five thousand dollars. They are now down about 130 feet, and work is progressing finely.

Dickerhoff & Gowan, have concluded to erect a 10-stamp mill to crush the gravel taken from their tunnel on Cedar Hill. Two mills have recently been put up on Texas Hill, which promise to pay well.

A fine ledge of decomposed quartz was found a few days since by Mr. Clackley, while at work sluicing off surface on his lot, which pays ten cents to the pan.

Mitchell & Co., of the hydraulic claim on Little Spanish Hill, have a bed of cement thirty feet deep, upon which they intend to put up a mill.

Napier & Co's mine on Poverty Hill continues to show some remarkably rich prospects, and so soon as the weather becomes sufficiently settled they contemplate erecting an arastra, with a couple of stamps attached, with which they expect to be able to work about four tons of rock per day.

Placerville correspondence of Sacramento *Union*: In a ledge fifty feet in width, running through the old Buckeye claim, on Texas Hill, every pan from several places on the ledge prospects from five to fifteen cents to each pan. The owners, H. A. and W. Wright & Co., intend to put up an arastra immediately. The Long Island claims were purchased a few days since by French & Co., of Gold Hill, at \$2.50 per foot. Hall & Co., on the same ledge north, are getting fine rock. They intend to put an arastra on their claim immediately. Shepard & Co. have got ready to take out rock. One thousand dollars of coarse gold has been picked up from the dirt within the last four weeks. The cement mills on Smith's Flat are all paying good wages. At Brownsville, Tullock & Co. have made three runs on rock from the Independence ledge, which paid between thirty-five and fifty dollars per ton. The old Eagle claims at Grizzly Flat are paying better than they did ten years ago. A new 40-stamp mill will soon be completed on the old Steely ledge.

## Kern County.

From the *Havilah Courier* of Jan. 19th: The mining claims situated in the Cavo District, near Kernville, and formerly the property of the Caldwell and Kern River Gold and Silver Mining Company, and consisting of the Bull Run, the Beauregard, the Jeff. Davis, and several others, have changed hands, and are now the property of DeLand, Ellsworth and others. The Bull Run, now called the Sherman, has been worked for the last two years by A. Staples, Esq., and has proved to be a rich and reliable mine. It has been sunk upon to the depth of 225 feet, and the lead shows no diminution in size or richness. A large amount of rock has been worked upon the twelve-stamp mill of that company, situated on Kern river, about half a mile from the mine. The yield of gold from the mine has been very great.

The Big Blue and Sumner claims, in the Big Blue lode, are about to be worked by Mr. J. W. Wadleigh.

The crushing of the rock in the Mammoth Gold Mining Company's mill, has been temporarily suspended, for the reason that the mine is not yet in a condition to keep the mill fully supplied with quartz. The Mammoth has always been regarded as one of the richest lodes in this section. The vein will soon be opened at a deeper point than ever before.

The last shipment of bullion from the Long Tom mine was something over \$30,000, the result of five weeks' run. The recent storms have injured the mines to such an extent that the mill of the New York and Clear Creek Mining Company has been compelled to stop work, but soon will be going again.

## Mariposa County.

A letter from Coulterville to the Mariposa *Gazette* of Jan. 19th, has these items: Douglass, Chamberlin & Co., are working away with a full force on their mine. They have four shafts sunk, ranging in depth from thirty to one hundred and thirty feet, from all of which they are getting good rock. This company have reuted a portion of what is known as the "Old French mill"—have put in four of Wheeler & Randall's pans, and made other improvements. They are working twenty-two tons daily.

McCrew & Bell, on Black Creek, near town, have started their mill of five stamps.

Their rock is paying about \$30 per ton. Charles Hope, the superintendent of the old Goodwin mine, on the North Fork, is now getting out and crushing some very rich rock—he has crushed sixty tons and it yielded \$36 per ton. The Virginia, owned by Capt. J. M. Aiken, three miles from town, has been opened in six different places, and in every place it shows a large well-defined vein. There have been taken from the various places upon which work has been done about 200 tons of ore, which now lies at the mine, the largest portion of which shows gold.

From the *Mail* of Jan. 19th: All the employees on the Mariposa Estate have been discharged, and work at the mines and mills has been suspended and will remain so, it is thought, during the pendency of the suit between the company and Dodge brothers.

Letter to same from Horseshoe Bend, says: Mining is here carried on at present on an extensive scale. Some ten large hydraulic claims are in operation, besides drifting to a great extent, and as a class the miners are doing well. Among the most successful miners are John Lewis, Captain Notherwood and Frank Horbeck. Quartz mining here, just at present, is at a standstill. We have a fine 10-stamp mill, built by Mr. J. B. Briechnan, of Coulterville; but he failed to make it pay, from the want of capital to furnish the mill with a proper amalgamating apparatus.

## Nevada County.

From the *Transcript* of January 23d: At the Soggs mine, on Deer Creek, rock is being taken from both the upper and lower tunnels, under a contract to take out several thousand tons. We are told that the quartz is looking first-rate. On Monday night the dam above the mill gave way, and the mill had to be stopped for a time, but the damage was repaired yesterday. An 8-stamp mill is kept at work day and night upon the quartz taken from this mine.

Leeth & Co., and Craig & Co., of Deer Creek, have discontinued operations on account of high water.

Stiles' mill is being repaired, and will resume work in about ten days. Five new pans have just been completed for the Banner Mining company. They now have ten pans and two settlers.

From the Grass Valley *Union* of January 24th: The Utah company have struck a very handsome two-foot ledge in their claim. The rock is good looking, and it is estimated will yield about thirty dollars to the ton.

The Union Hill mine has been compelled to suspend operations temporarily on account of high water.

A fire occurred, says the *Gazette* of January 23d, in the tunnel of Buckman & Curran, near Little York, on Monday. Some parties at work were more or less injured.

The National says the Alison Ranch company are now having built fourteen of Norton's pans, to be put up and used by them to grind the tailings which have accumulated about their works for a number of years. It will probably take the company a year to exhaust their tailings, which are supposed to be very rich.

EXCELSIOR.—From the *Meadow Lake Sun* of Jan. 19th: The mines worked during the winter are progressing favorably. The U. S. Grant Co. are now down sixty feet on their ledge, and find as good, if not better rock than at the surface, and their mill continues to pound away all the time. The mill of the Golden Eagle Company is about complete, and before our next issue, will be running on rock from the mine of the company, every piece of which shows free gold. The mill of the Reduction Company is also nearly or quite finished, and is to be supplied with rock from the Comet Company, and also from other claims on the "Old Man" mountain. The Wintou mill has been thoroughly repaired, and is now ready for job or custom work. The Mohawk Co. are now running their third level or tunnel, and we understand that within a day or two past have let a favorable contract for its further progress. The California Company still works, and pounds and blasts away at their big shaft. Their mill is nearly ready.

## Plumas County.

From the *National* of Jan. 9th: The following items are from Mineral Township: The Plumas and Spanish Ditch has been greatly damaged by the late storms, and parties having property situated directly under the ditch have been greatly damaged by the flow of water. . . . Many miners who have been waiting for water in dry ravines, have been well supplied, and some in the neighborhood of Meadow Valley and Spanish Ranch are being well paid. . . . Many of the old diggings that have had tailings piled up for years, impeding the working of the same, have been cleared out effectually, and are now paying good wages.

From the Quincy *Union* of Jan. 19th: The storms, snow and rain, together with the cold weather, has put a pretty effectual stop to outside mining for the present. The owners of tunnel claims in different parts of the county are at work taking out pay grit, but they will have to wait for water before they can wash up.

The owners of the Clairmont Hill claims are still driving ahead with their tunnel, and the gravel improves as they advance in it.

## Placer County.

From the *Herald* of Jan. 26th: A majority of the owners of the Green Emigrant ledge have sold to Messrs. Lowry and McCarty, who have commenced work again on the claim. On Tuesday last they took out some very rich specimens from the old shaft.

Recently Welty's mill, near Ophir, crushed five tons of quartz from a lead near Gold Hill, which yielded six ounces, thirteen and a half pennyweights, worth about \$14 per ounce.

At a miner's meeting at Forest Hill on Jan. 20th, a "Miners' Protection League" was formed, the object of which is to discountenance the employment of Chinese laborers for mining claims.

From the *Stars and Stripes* of Jan. 23d: Col. Louis Hagan, of Sacramento, who has been extensively engaged in mining in this State and Nevada, has machinery on the way from San Francisco for a quartz mill to be erected near Ophir.

## Shasta County.

From the *Courier* of Jan. 19th: Work has been temporarily suspended on the Tornado claim, owing to the want of water in the Clear Creek ditch since the destruction of the Whisky Creek flume. The last clean up paid \$305.

## Sierra County.

An *Alta* correspondent says: The Keystone mine, located not far from the Buttes, is paying largely, and it is surprising to see how many equally as good, if not better veins in this county lay unprospected. Skillful labor, capital and energy is all that is required to make Sierra county one of the leading mining districts of California.

The *Alta* knows nothing of the rumor that the proprietors of the Sierra Buttes quartz mine have offered it for sale for \$575,000 to parties who are trying to effect a sale in New York.

## Trinity County.

From the *Journal* of Jan. 19th: We hear from Junction City that John Dacy has just struck very rich prospects in the upper bench, between the old Dacy claims and Fagan's claim. Prospectors have heretofore found as high as eighteen cents to the pan in this ditch, but no water could be had to work. McKinney & Co. have found richer ground in the second bench above Price's Bar, than that heretofore worked. Junction City is just now taking the lead of other districts in the county, which is accounted for from the fact that more prospecting is done than elsewhere.

Turner Bar Company's ditch to Smith's Flat has been thoroughly repaired, and the Smith ditch will be soon running water again. Cochran's ditch to Filibuster Flat will be ready for use a week hence.

All the damage done on Indian Creek by the December storm has been repaired. Every dam in the creek was carried away, and the fact that they have all been repaired and the ditches put in working condition in the short space of a month, speaks well for the enterprising miners of that district. The mountains at the head of Indian and Redding's creeks are covered with a great depth of snow, and the indications for a successful mining season was never better. About 150 men are employed in the Indian Creek mines at the present, and the number will be increased when the new diggings lately discovered are fairly opened.

## ARIZONA.

The *Alta* of January 23d, gives an extract from a letter dated "Big Bug District," December 3d, which we condense:

The first location of quartz mines in the Big Bug district was made in 1864. The Ticonderoga lode is considered the richest lode now opened and worked. It is near seven feet in width, and pays from fifteen to one hundred and twenty-five dollars per ton. This mine is owned by Colonel Woolsey. He is working a 5-stamp mill by water. The Dividend, Big Bug, and Galena lodes come next. They are owned by Berger & Co., who work the ores in a 10-stamp mill by steam. The ore pays from forty to seventy-five dollars per ton. They have turned out several respectable lumps of amalgam. So far, I think most of the metal taken from the mills here has been used to pay expenses and the debts of the company. Next we come to the Eugenie, Sinaloa, Sonoma, Green Tree, Bourbon, Napa, Orion, Richmond, Buncombe, Chaparral and others, all of which have been tested by work suffi-



ciently to prove their worth. Some of them have been worked with arrastras, and yielded an amount that would pay well with a mill. Of the wealth and permanency of these mines I have not the slightest doubt; but that, of course, remains to be proven. The great trouble here is, that most of the owners have not the means to go on and work these mines as they ought. The lodes are well defined, as a general thing, and easily traced. These leads are all within two miles of Big Bug Creek. The power for mills used on this stream must be steam, as there is not water sufficient the year around for any other. There is a good wagon road already made to these mines. It is twenty miles from here to Prescott, and about one hundred and seventy miles to Hardyville. There are three quartz mills now running in this district. It is six miles to Lynx Creek, and ten miles to Colonel Coffin's mill, on the Bully Bueno mine. The number of miners at present is about sixty, with a steady increase. The dark days of this part of Arizona have changed into light, and we are all looking forward to the bright future that is looming up before us. Even now, from the summit of nearly every hill in this range of mountains we can hear the merry clank of the stamps. The results of the crushing from the mills in the surrounding districts is equally good. There are several other mines in this district now opening, and mills erecting, all of which promise to pay well.

A letter from Prescott says: The Sterling lode, six miles from Prescott, worked by W. T. Flower, pays ninety dollars per ton. The small mill at the Vulture lode, Wickenburg, sixty miles south of Prescott, is doing finely, and the large mill will be ready early in February. At Williams' Fork, on the Colorado, the Planet and Eliza copper mines look better than ever. The furnaces of Knowles & Coffin were started on the first day of the year.

The Arizona Miner of December 29th says: We have it from one of our old and respected quartz mill men from Nevada, that Colonel Woolsey's mill at Agua Frio is now running very successfully and efficiently. The quartz is good and abundant—the mill in fine order and in good hands.

The large quartz mill of A. E. Noyes & Co. has arrived at the Umpqua mine, seven miles from Prescott.

#### BRITISH COLUMBIA.

Several parties have arrived lately in Walla Walla from the Kootenai country. They report that mining operations had been suspended for the winter. The work on the "big shaft," from which so much has been expected, had stopped, owing to the water-wheel freezing fast. The winter in the Kootenai country has been unusually mild, and miners were calculating upon an early spring.

#### COLORADO.

From the Times of January 8th: At James' Creek there are two or three hundred miners and prospectors hard at work—some preparing to put up mills in the spring, and others sinking on the veins.

The Smith & Parmelee Gold Company produced during the month of December 875 ounces of gold, running fifty-one stamps. Mr. Belden, the superintendent, says that had he not had some interruption, the amount would have exceeded nine hundred ounces.

Last week the foreman of Gunnell mill run a lot of Gunnell lode tailings through a Bartola pan, and realized one hundred ounces of amalgam, which retorted thirty ounces of gold.

Same of December 31st: The Anglo Saxon, a famous new silver lode lately opened near Georgetown, Clear Creek county, was purchased on Saturday last by Messrs. Eb. Smith and Fox Dieffendorf, two well-known moneyed men. The price paid was reported to us at fifty thousand, twenty-five thousand of it cash. Out of three pounds of the average ore, we saw a silver button worth \$4.05.

From the Denver Gazette of January 6th: In Ward district, the Ni-Wot company are making preparations to rebuild their mill, and have paid off their road hands. Cushman & Co's 10-stamp custom mill is running night and day, and the ore put through gives a rich average. The Long's Peak company are re-furnishing their mill. Crosby & Thompson are running their mill day and night on Stoughton ore with good results. Several companies are sinking on their lodes. Bixby is doing well with the old 6-stamp mill on Snicker ore. Ten thousand dollars cash has been offered and refused for claim No. 2, on the Columbia. Another very promising lode has been struck by a Mr. McMin.

#### IDAHO.

From the Owyhee Bullion of January 17th: The quartz mill of Carter & Co., in Flint district, is nearly completed, and will probably start inside of two weeks. The roasting furnaces, which are the only thing that can

delay them so long, are being rapidly built. It is the intention to work rock from the Rising Star mine.

The latest news from Salmon River, says the Montana Post of January 5th, confirms the previous reports as to its richness and extent. Some forty gulches have been discovered, and the miners are only awaiting the return of spring to prosecute their development. Parties who have gone over from this place, write back to their friends to stay here during the winter, as nothing is being or can be done at present, but encouraged them to come in the spring. Flour is worth twenty-three dollars per hundred in the mines.

#### MONTANA.

From the Post of Jan. 5th: Ira L. Phillips has several shafts sunk on his leads to a depth of fifty feet, and has a large force of hands employed in developing them still further. The crevices are increasing in richness in a most satisfactory manner, and a mill will be put up next season.

We erred somewhat in giving the returns of the last clean-up from Judge Turnley's mill. The net amount will be \$8,820.85, for one week's run, during which the mill crushed some eighty-five tons of rock.

Claims in Lost Horse Gulch, for the amount of work being done on them, are turning out exceedingly well, and all holders of ground are confident of having a good thing. We saw a prospect from two pans of dirt out of Perry & Co.'s claim which weighed \$9.50. The gold was coarse and much resembled that from Summit district in Alder Gulch. Quartz of surpassing richness is found in the surrounding hills. Two lodes were recently discovered which prospect equal to anything in the Territory.

At Highland, everything looks promising. There are some thirty or forty claims being worked by drifting, and competent judges estimate the weekly proceeds of these at \$30,000. The numerous gulches in the vicinity will be prospected as soon as the spring opens, and we expect to hear of rich discoveries. There is about four feet of snow on the range this side, and traveling is difficult.

Bannock letter to same, dated Dec. 25th, says: The new 24-stamp mill of Kirby & Clarke, Marysville, is not yet quite ready for crushing. The company has a large amount of quartz ready at the Mademoiselle lode. The Hopkins & Butterfield Company have sent east for better machinery. Col. N. E. Wood, is still sanguine of success with his crusher and amalgamators. The engine, which was furnished by the N. J. Company, proved a failure, being too small and deficient in power.

A letter from Virginia City to the Calaveras Chronicle, Jan. 4th, has the following: The placer mining in this country is confined exclusively to the gulches and small creeks, and they are scattered here and there in localities over a great extent of country, from a dozen to fifty miles apart—and frequently only one or two gulches will pay. There are no hill diggings here. Quartz throughout the Territory promises well. In every district where any trial has been made of the ledges they have been found to be rich, and greenbacks by the bushel are being sent here from New York and other Eastern cities, for their development. The most of the mills will be brought from California. Eastern mills, so far, in almost every instance have proved a complete failure. Possessing, as she does, ledges unsurpassed in number, richness and extent, with the best of mill sites in every direction, and plenty of fuel, the future prosperity and greatness of Montana, as a mining country, does not admit of a doubt.

#### MEXICO.

A Mazatlan letter to the Atla of Jan. 29th has the following: Mining companies are at work again at Cosala and the adjacent mines; and as it is now understood that the authorities will permit the shipment of bullion, we are looking forward to large exportations. A few shipments from our prominent mines here will awaken you Californians, and we shall soon have a large emigration of Americans, who will develop the riches of our mines, and prove that Mexico is still rich in silver.

#### NEVADA.

##### Black Rock.

The latest news from Black Rock is to the effect that the new mill made one run, but owing to the inferior quality of the salt used, they were unable to make a satisfactory test of the ore. The company have ordered a quantity of salt from Virginia City.

##### Esmeralda.

From the Union of Jan. 19th: "On last Saturday the remainder of a shipment of bullion (1,700 pounds in all) arrived in Aurora, en route from Hot Springs to the Bay. This bullion was from the smelting works

of Dr. Partz and from ore from the Cornucopia mine. The mine is in good order for getting out ore, and there is a great deal of good ore in sight. A number of miners have lately been employed, and it is the intention of the Superintendent to take out enough ore to keep the furnace constantly occupied. The mines in this section are, so far as we can learn, looking very well.

##### Humboldt.

From the Register of Jan. 19th: The North Star ledge has been struck in the shaft, and it looks handsomely. It is widening rapidly as depth is made, and on Wednesday had spread out to five feet. The samples of rock we saw we would think could be worked to yield near a hundred dollars the ton.

The workmen have struck the Agamemnon ledge, or a number of feeders—do not know which. Quartz, in strata, and containing a plenty of sulphurets and other silver ore. Will know more of it next week.

Mr. Davids, Superintendent of the Seminole Company, has started for New York, to confer with the company in regard to further operations. The tunnel is already in nearly half the distance to the first ledge.

Same has Oreana items as follows: The refining furnaces of the Oreana Smelting Works are all working to entire satisfaction. The shipments last week were 2,027 ozs.; value, \$2,400; previous week, about the same, and will do as well this week. The present cupelling furnace is small, but works well. Will catch up with the smelting furnaces by February 1st, when the entire works will be in operation again.

A new cupel and two more calcining furnaces will soon be added to the works.

A telegram from Unionville, Jan. 24th, is as follows: The American Basin Company, on the Sheba ledge, struck some very rich ore yesterday in their tunnel, which is in a distance of 780 feet.

##### Pahranaगत.

From the Territorial Enterprise of Jan. 24th: Mr. Sanderson, who left Pahranaगत about a week ago, reports the prospects as encouraging.

About five hundred miners are in the district, and the attention of Eastern capitalists is being attracted toward it. Mr. Raymond, who is operating for a New York company, has a five-stamp mill running on rock from the Illinois ledge. Owing to the refractory character of the ore, not above twenty per cent. of the assay value of the ore was saved in the first runs; but roasting furnaces have been erected and another run made, the proceeds of which were being cleaned up the day Mr. Sanderson left. Mr. Raymond informed him that the indications were that the new process would work the ore up to about ninety per cent., and, consequently, produce a result of from \$125 to \$175 per ton. Three steamers had arrived there during the season, and another was expected in a few days, which had on board the machinery for another mill.

##### Reese River.

From the Reveille of January 16th: Operations at Silver Bend are progressing favorably: The Combination company are now engaged in running tunnels to cut the ledge in their claim on the Highbridge; the first is intended to cut in 200 feet below the outcrop, and the second 100 feet below that. Colonel Buel's location on the Highbridge is yielding ore of an improved quality. It is opened by three inclines, which are connected by drifts. The greatest depth attained is sixty feet. The location of W. E. Leon on the El Dorado ledge is also being opened by an incline shaft. A small but very rich vein of mineral has been discovered about a mile north of Buel's mill at Belmont. It was named the Silver Cord, and its thin vein of ore, pronounced the richest yet exhibited in the district, has widened to eighteen inches at the depth of several feet.

From same of 17th: We saw to-day two bars of bullion from the works of the Social and Steptoe company at Eagan Cañon. The bullion is very fine and contains about six per cent of gold. This is the first lot of bullion received from that section for a long period, but hereafter it will produce regularly. We are informed that the bullion was obtained from the tailings of former working, which assayed from \$140 to \$160.

Same of 18th: Some 7,000 ounces of bullion were brought into town yesterday from the mill of the Twin River company. This is worth, at \$25 per ounce, about 8,750.

Same of 19th: Seven and a half tons of ore from the Buel North Star, of which Capt. Phillips is superintendent, just reduced at the Manhattan mill, yielded a bar of bullion valued at \$1,097.

We learn through a letter just received from Hot Creek, that the mill of the Consolidation company is doing well, and that a considerable amount of amalgam has accumulated.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Territorial Enterprise of Jan. 16th: The Canfield mine belongs to the Silver Bend Silver Mining Co., the stock of which is mostly held by Eastern capitalists. The company has a working capital of \$300,000 in coin to develop their mine and erect mills.

Same of 24th: A large proportion of the mills in this county have been obliged to suspend operations by reason of not being able to get the necessary ore to keep them running, on account of the terrific condition of the roads.

The Bullion Company are reported to have struck a fine body of ore at their lower level.

At the new shaft of the Imperial and Empire companies another installment of heavy machinery was received for the proposed new works, which will be of the most massive and powerful description.

Same of 25th: The old claim of McMeans & Williams, west of American Flat, was sold the 25th day of June, 1866, for debts, and purchased by Mr. Frank Baker. The company having failed to redeem, Dr. McMeans and Andrew Lawson, two of the original locators of the ground, purchased Baker's title to the whole, and are now at work again.

The Hale & Norcross Company have commenced a shaft of the largest dimensions, east of their present works. Through this shaft the mine will be worked to a very great depth. The top is 207 feet below the level of the top of their old shaft, and it will intersect the ledge at the perpendicular depth of 1,133 feet from the surface.

Same of 26th: The suit of Thomas Farrell against the Savage Co., for 600 feet of ground, is now brought in a new form in the U. S. District Court. A motion for an order granting a survey was argued and granted. There are several grave difficulties in the way of making a survey of the ground claimed, except at the surface, unless the Savage Company will allow their cages and machinery to be used for the purpose.

**BLASTING FUSE MANUFACTORY.**—A company has been formed in Grass Valley for the manufacture of fuse by a machine invented by James Eva, of that place. The capital stock has all been paid in to make a beginning. Mr. Eva is now in New York superintending the construction of his apparatus. The Grass Valley National of Jan. 19th, says:

"In all probability the first fuse manufactured will be in Grass Valley—being a central point from which the company will introduce it to all the mines in this county—at some future day. The principal place of manufacture will be at Santa Cruz, where powder, twine and paper is already being manufactured, and which are necessary to the manufacture of fuse. Mr. Eva has already manufactured fuse here with his model machine and given it to practical men for test, and the result has been highly flattering. His fuse will be somewhat different from that received here from the Atlantic States or England. The imported fuse is bound with tape, while Mr. Eva's is wove on the outside, making it almost impossible for the water to find its way to the powder."

We have already spoken of the necessity of such an institution in California. The importance of having fuse which is fresh from the manufactory, is well understood by those whose lives are dependent upon it. The severe tests to which the imported article is subjected to, in transportation through a variety of climates, makes it more or less unreliable. Measures have been taken to procure a patent through the MINING AND SCIENTIFIC PRESS.

**GOLD AND SILVER IN MINNESOTA.**—A Washington telegram, dated Jan. 26th, says the Commissioner of the General Land Office has received communications from St. Paul, Minnesota, stating that assays made of quartz rock found in Charleston county show the existence of both gold and silver veins, well defined. Work has been performed sufficient to show the locality rich in mineral.

**THE LARGEST CLOCK** in the world is that on the English Parliament House. The dials are twenty-two feet in diameter, and the pendulum is fifteen feet long.



## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the MINING AND SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.

## San Francisco:

Saturday Morning, Feb. 2, 1867.

Agency Notice.—S. D. Whittaker's agency for this paper has been revoked.

## Notices to Correspondent.

P. W., HUMBOLDT, NEVADA.—The most economical and judicious modes of proving an untried mine or lead have already been described in former numbers of this journal, in reply to various correspondents, for an account of which we must refer you to our back files. We have recently however, been informed of a singular mode of working mines practiced in Derbyshire, which may perhaps prove useful in cases like yours. We may premise our description, which is copied from *Farey's Derbyshire*, that the mode about to be described has been in use certainly from the date of the Roman occupation of Britain, and so far as climbing shafts are concerned, is, we are informed up to the present time, almost invariably adopted in the High Peak and adjacent lead districts. Farey observes "The miners generally descend to and ascend from their work by means of a ladder-shaft, or rather climbing-shaft, which consists of two vertical rows of stemples fixed across the vein, at about a yard apart, like two ladders. We understand this to mean like the two poles of a ladder, in fact a ladder minus the cross or foot piece, set upright, between which the miners straddle from one set of stemples to the other, holding at the same time by each, by which means they ascend and descend with the greatest celerity and safety." We are assured that miners accustomed to this mode, prefer it to a ladder, and further that those who practice the system can ascend and descend with greater dispatch than by the means of ladders. Perhaps our account would be incomplete if we did not describe also the mode occasionally adopted for carrying the ore stuff to bank in cases such as the one under consideration, where a perpendicular or straight drawing shaft does not exist; again we quote Farey: "The lumps of spar or vein stuff containing ore, the coper collects into shallow oval spel\* baskets called whisks, and these are taken from him by the boys, called setters-on, who carry the same a stage of about twelve yards, along the sole or gate of the mine, and then hand them to other boys, who carry them a similar stage and returning with an empty basket, until the stuff thus reaches the kibble or small barrel at the bottom of a turn or underground shaft, which kibble, when full, is wound up by the turn drawers, who convey it to another turn, and so on, etc., etc." "The author subsequently observes when a shift or a shift and a half of work is performed, he begins drawing the bunning or stemples forward. This consists in forming a hole in the solid side or skirt of the vein with the point of his pick, at about five feet above the sole, and opposite to it in the other skirt, striking out a sort of upright mortice in the skirt, whose bottom is level with the opposite hole; he then chooses or cuts a stemple or booth of the right length, that is a piece of wood of the size of a man's arm or larger, according to circumstances, having one end cut to a round blunt point called the egg-end, and the other square and a little loosened, called the head. This round point he enters into the hole cut in the skirt, and the other into the top of the mortice or groove cut in the opposite skirt, and then by a hammer or his mattock, drives the square end down to the bottom of the mortice, by which means the stemple becomes a firm and immovable strut across the vein; when four or five of the stemples are thus fixed, flat pieces of wood called fails are laid across these on which the coper proceeds to lay his deads, etc. etc.

\*The local name applied to parties similar to that of Triliter in Cornwall. The name for young trees or branches generally willow or hazel, about half an inch in diameter.

## Can a Steamboat be Propelled without an Engine?

The two recent inventions, known respectively as the Water Jet Propeller, and the Steam Syphon Pump, would seem to imply the possibility of an affirmative answer to the above question—nay, even render the accomplishment of the idea a matter of certainty. The only question is as to the economy of the plan.

The recent application of the water jet to the English Government steamer "Waterwitch," is pronounced by English engineers a success in every essential particular. The experiment has not been confined to this vessel alone, for we are told in the *Scientific American* of August 25th, 1866, that the principle was known and acknowledged on the continent before its application to the Waterwitch, and that vessels propelled by the reaction of water forced out of pipes "have actually been used for traveling, and are still in use."

The success of the Steam Syphon Pump is still more fully demonstrated, and may be set down as almost beyond the possibility of a doubt. One of these syphon pumps was recently tested at the Brooklyn (N. Y.) Navy Yard, under the direction of a Board of Naval Engineers, who reported that it raised in a given time 41.7 per cent. more water than one of the best piston pumps propelled by steam, and having the same area of discharge; but in doing so, it consumed 48 per cent. more coal; making the cost for fuel, for any given amount of work, 6.3 per cent more than that involved in the piston pump. This deficiency, however, the engineers state in their report, is fully made up by the economy of room, and simplicity of construction of the syphon pump; while its other advantages far exceed any other pump for the discharge of large bodies of water.

In the trial of the jet, on board the Waterwitch, we are told that an engine of 160-horse power was employed, which, by the aid of an immense turbine wheel, sucked in and ejected 300 tons of water per minute; the effect of which was to give her more speed than could be acquired by the same amount of fuel employed with the same engine turning screw or paddle.

What is now proposed is to substitute for the engine and turbine wheel of the Waterwitch, a steam syphon pump, to be worked by a jet of steam, thereby saving all the space occupied by the engine and turbine wheel for freight and passenger room.

That this can be economically done will be seen by the following simple calculation, which shows the power with which the 300 tons of water per minute, are ejected from the nozzles of the pipes employed. For convenience of calculation, we reckon the ton at 2,000 pounds. We have:

300 tons of water = 600,000 pounds  $\times 9 = 5,400,000 \div 33,000 = 163$ -horse power.

From this we draw the conclusion that it requires 163-horse power to raise the water to a height of nine feet; and the pressure due to the power and velocity expended in raising the water, is equal to the power with which the water is propelled from the sides of the boat—that is; the water is propelled with a force that would raise it nine feet. (A discrepancy of 3-horse power only, will be noticed between our calculations and the horse power set down for the Waterwitch.)

Having shown what is necessary to produce certain results, we will construct our steamboat by making the same kind of inlet and outlet as those employed in the Waterwitch, or any other that may suit our purpose better; but instead of putting in a cumbersome steam engine and heavy water-wheel to load down and shake to pieces the boat, we will merely insert a steady acting steam syphon pump, which will not occupy more extra room than a barrel of flour, and the action of which will be as steady as a steam conducting pipe. The height to which we will raise the water will depend on the fall we

wish to get. The vacuum created will raise the water to the desired height, and it will descend in the opposite direction by gravity, with a force precisely equal to its height and velocity. We now suppose the height to be nine feet, and the quantity of water 300 tons per minute. We have:

300 tons = 600,000 pounds  $\times 9 = 5,400,000 \div 33,000 = 163$ -horse power.

In this calculation no account is taken of loss by friction, etc. We submit it for the consideration of engineers, and should be pleased to hear from any one who may think it worth his while to go into a careful analysis of the same.

The *London Times* thinks the trial of the Waterwitch brings the English fairly abreast of the American, in the way of marine novelties. Where is the ingenious American who will now take one more step in advance, and from his new stand-point bid his English cousin "come on?" Will not the successful accomplishment of the idea suggested in the caption of this article, place the Yankee once more ahead of Johnny Bull?

ARIZONA ALL RIGHT.—Gov. McCormick of Arizona, who left on the steamer of January 26th for his home, carrying with him the good wishes of every body, has reason to be proud of the success of his mission. With him went four companies of U. S. troops—two of cavalry and two of infantry. Two companies of cavalry had already been dispatched through his instrumentality. General Gregg, of the late army of the Potomac, is in command.

Arizona is bound to "shine." The only drawback upon her progress has been the unsettled state of things resulting from insufficient protection against Indians. The Governor has gone directly to the root of the matter, in coming in person to lay affairs before the military authorities. His success shows that he "knew how to put the case." We shall now expect to see some more "regular bricks" from that quarter soon—some metallic ones. In our mining summary of this issue will be found intelligence confirmatory of the article in our last, on the mines of Central Arizona.

A NEW COUNTERFEIT.—A new counterfeit half dollar has made its appearance, which is pronounced very dangerous and not easy of detection, except on close examination. A correspondent of the *Alta* says that an analysis shows it to be composed of nickel 69.35, copper 30.66 = 100. The alloy is hard and difficult of fusion, but tough and malleable. Its weight is 10.18 grains more than the genuine coin, and it is a little thicker. On examining the lettering with a magnifying glass they will be found quite imperfect as compared with the genuine. The angle at which the shield rests against the figure is also four degrees greater. The above description will enable every person to readily detect the counterfeit on close examination; but the difficulty here is that the practice of passing silver coin from hand to hand in paper rolls, allows of its very general introduction, with small chance of detection, especially as its diameter exactly corresponds with the genuine coin.

THE QUARTZ CRUSHER of Bargion and Johnson, says the *Stockton Independent*, "is being manufactured at the Globe Foundry in this city. Several have been forwarded to the mountains. Each machine weighs about 4,000 pounds, and will crush as much rock daily as a 5-stamp mill." This institution has been described in a former number of the *MINING PRESS*.

JOHN WRIGHT, the manufacturer of the celebrated pick which has been so serviceable to the miners of this coast, is hard at work in his new shop, No. 229 Fremont street. It is next to the *Etna Iron Works*. Mr. Wright has always on hand a general assortment of picks for quartz and surface mining.

## The Removal of Blossom Rock.

On invitation of Capt. Bloomfield, we were present yesterday morning, to witness the second blast to be made for the purpose of removing that dangerous obstruction to our harbor, well known as Blossom Rock, and located a short distance inside of Fort Alcatraz. The charges are placed in a properly prepared cork, and lowered to the rock, in about sixteen feet of water. They are fired by a galvanic battery from a boat near by, through insulated wires connecting with the powder. Notwithstanding the complete success which attended the effort of the previous day, the attempt was yesterday unsuccessful, owing, as was afterwards found, to an imperfection in the insulation of the wire. The battery, which was an old one, had been carefully put in order for this work by Mr. Roach, the well-known mathematical instrument maker of this city, and was found to be still all right. Mr. Roach, who was present at the trial, showed this to be so, by repeatedly firing cartridges after the apparatus had been taken up and placed on board of a small schooner from which the work is directed.

By a series of experiments the failure was traced to a defect in the main wire, which was an old one, and which had undoubtedly been injured by previous use. These experiments were made with only four cells; whereas twelve were unsuccessfully employed in the efforts to accomplish the submarine discharge. Had a larger number of cells been employed, the wire, imperfect as it was, would probably have conducted sufficient electricity to have fired the charge, notwithstanding a partial loss of the current.

It strikes us that an additional battery would be a matter of economy in this work, and avoid delays from slight imperfections, which must always be expected in submarine operations of this kind. We presume the public will be advised of the hour when the next blast will be let off, which will be early next week.

During the operations of Mons. Mallefert, in 1851, at Hell Gate, near New York harbor, a battery of sixty 7-inch cells were used, with charges of from 125 to 250 pounds of powder. In the present operations on Blossom Rock, only twelve 3-inch cells are employed. The charge of powder on Thursday was 175 pounds; the same quantity will be employed in the next charge. Mons. Mallefert had two full boats crews to assist him, while the officer in charge here has less than half that number of men in employ. There is no doubt but that this serious obstruction to our harbor will soon be effectually removed, and at a small cost to Government. The work is being done under the supervision of Col. Williamson, of the corps of Topographical Engineers, who has placed Lieut. Ewer in special charge of the same.

GOULD & CURRY REPORT FOR 1866.—We have received, through the favor of David Bowie, Secretary, a copy of the "Seventh Annual Report of the Gould & Curry Silver Mining Company." It contains the report of the President, that of the Superintendent, and that of the Secretary, each of them models in their way. This is as it should be. A full, comprehensive, and detailed report like this, is what all honest companies should make at stated periods. We think, moreover, that such reports should be published by the directors in a *mining journal*, rather than in pamphlet form, in order that readers throughout all the States and Territories on this coast might have the benefit of the experience therein given. Much could be gleaned from such publications, the knowledge of which might save others expensive experiments, and perhaps expensive litigation. In Australia the Colonial laws make obligatory such reports as this; just as our own State laws require the reports of banking institutions. It would be well if such were the case here. We shall, next week, notice the report more in detail, giving therefrom some valuable statistics, interesting to miners generally.



(Special Notice.)

**Stewart's Patent Hinge Shoe and Muller-Plate Grinder and Amalgamator.**

This is one of the GREAT INVENTIONS of the age—can do more work with less power, and at less expense in a given time, than any other pan in use. While the most successful modes hitherto adopted have not succeeded in working ordinary gold and silver ores nearer than from twenty to fifty per cent., and silver ores, particularly, if at all refractory, in within fifty to two hundred per cent. of the fire assay, the former is guaranteed to work within ten per cent., while sulphurets work as low as fifteen to twenty per cent. of the same by this process.

That this has been done, can be proven by many reliable witnesses in this city, and experienced miners; and that, too, at a cost of but \$2.50 per ton for chemicals—a record unsurpassed on the coast—a result attained by long years of thorough study of mechanics and chemical principles, in connection with practical experience in quartz mining.

Of the four different sizes, the largest and smallest, with their respective capacities, are here given—the intermediate having proportions similar in every respect. The largest pan, with a diameter of five feet, makes forty revolutions per minute, works seven tons per day, and 2,500 pounds at each charge. The smallest, one and a half feet in diameter, with eighty revolutions per minute, works 600 pounds per day, and 100 pounds at a charge.

The following are some of the advantages claimed for this pan over all others:

1st. The grinding plates wear down evenly—no merit claimed by none other, even in theory, with possibly the exception of the Tractory Pan—the theory in this case being fully demonstrated by actual working; and the same may be said of the shoes, which, working on a hinge-joint, do not wear in grooves as in other pans; so perfectly adapting themselves to the dies, and also, from the fact that they are always gradually changing their position from the time the pan starts until they are worn out. The shoe is made fast to the plate by a convex portion on the center—said portion being three inches in diameter, three and a half inches high by three inches in thickness, and eight inches in length, a concave being cast on the under side of the muller-plate to receive the convex portion, while the shoe is held in its place by a key or staple, at the option of the purchaser.

From the foregoing it must be evident that as the shoe, touching the plate only in the center, and at liberty to play up and down *ad libitum*, must necessarily adapt itself to the bottom of the pan or dies, and, consequently, wear away uniformly.

2d. The muller-plate in the 5-foot pan being only three and a half feet in diameter, and but seven inches broad by four inches thick, covers but a small portion of the bottom of the pan, leaving the shoes and dies exposed, and thus giving the pulp a free circulation under and through the dies.

3d. Owing to the same cause, viz., the comparative smallness of the plate, not half the power is expended in throwing the pulp as in other pans.

4th. As the diameter of the cone in the 5-foot pan is about two feet, and as much the larger portion of the steam bottom lies within this cone, whose walls are only three-eighths of an inch thick, it must be clear, that, in consequence of the thinness of these, much less steam will be required to heat the pulp than through a bottom, as is ordinarily the case, of thirty inches in thickness. These are plain matters of fact, let them be borne in mind.

5th. For the reasons already assigned, it is the cheapest pan ever made, and reduces ore to an impalpable powder with much less power, and, at the same time, with an enormous increase in yield as compared with other methods. As evidence of the above read the following facts:

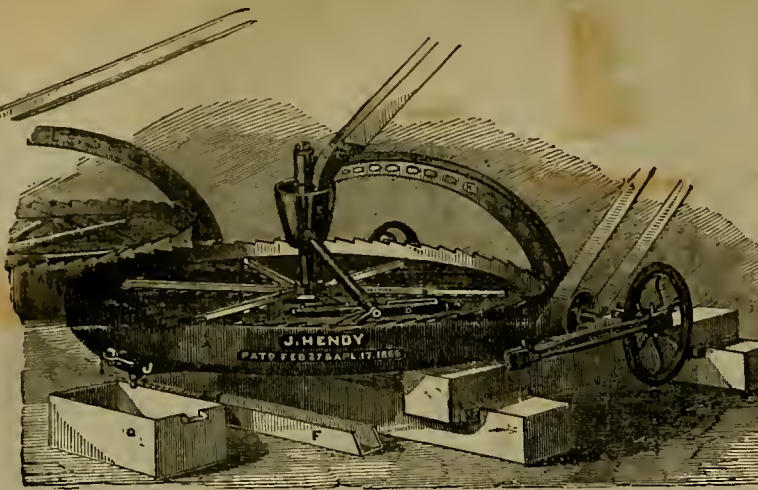
1st. Messrs. Cutter and Waters of this city, having worked 100 tons of ore at their mill—one of the latest style—in Calaveras county, got a yield of only three dollars per ton; 500 pounds of the same character of rock from their mine yielded in the hinge pan at the rate of forty dollars per ton; 100 pounds of picked rock, which they said they had been unable to get worked anywhere, returned by this process at the rate of \$120.

2d. One hundred and twenty pounds of rock, paying Mr. E. T. Steen, mill-working, only ten dollars per ton, paid in this pan \$150.

3d. Seventy pounds from the Harpending mine, near Lincoln, yielding from thirteen to fifty dollars under the stamps, in this worked up to \$95.75.

4th. Mr. Charles E. Abbott had thirty tons from the Pyramid mine, White Oak Springs, El Dorado county, carefully worked at the Union mill, near Diamond Springs, one of the best in the State, with the necessary copper plates, shaking-tables and champion pans—the Knox-pan, so widely and favorably known, among the number—and got a return of something over eleven dollars per ton; the sulphurets assaying about \$300.

Rock taken promiscuously from the same pile yielded, in Stewart's hinged-pan, \$100 per ton. Let these facts, out of hundreds that might be given, going to show the superiority of this over other pans, be well considered before purchasing elsewhere. The inventor guarantees to teach any man in ten days to work it as closely as he can himself. All these pans require is one of Wheeler & McAuley's Mammoth Crushers—to be seen at the Miners' Foundry, or in operation at Hunter's Point, near the city. It crushes ore as fine as flour—the fineness of duck-shot or of beans being sufficiently fine for the pan—and at the rate of two and a half tons per hour. In this way a mill can be built with a capacity of fourteen tons per day at a cost of only \$5,000. For further information, call upon J. H. STEWART, at the Miners' Foundry, where his pans can be seen.

**HENDY'S LATEST IMPROVED CONCENTRATORS,****FOR GOLD AND SILVER ORES,**

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

By this improvement the conical Feeding distributor has been entirely done away with. The feed in this machine is made to enter the conical hopper; from thence it passes through the hollow arm, leading to the T attachment, marked D, which is made to sweep slowly around the circumference of the pan, by means of the ratchet teeth upon the upper edge of the same, into which two pawls are seen to work. This motion is obtained from the vibrating action of the pan, as in common use. Upon the under side of the T attachment to the arm, are small openings or perforations, through which the pulp is dropped from the feeder into the pan. The constant revolution of this arm secures a more uniform feed than can be obtained from the conical feeder. A set of stirrers, with small projectors or teeth, is shown, which is also kept in revolution with the feeding arm, the design of which is to prevent the sand from packing near the center, where the motion is diminishing. The discharge orifice and box for receiving the sulphurets will be readily distinguished at box G, and the debris discharges near its center and passes off in the sluice F. These pans may be so connected, as in the cut, that two can be driven by one shaft and pulleys.

These machines have been thoroughly tested, and pronounced a perfect success.

The proprietor of this Concentrator feels satisfied that it HAS NO EQUAL in use. It is designed for saving finely divided Quicksilver, Amalgam and Gold from the sands, and for concentrating and saving the Sulphurets, and is to be placed behind any and all other machines in use. Any person of ordinary experience with Quartz Mills can readily fit them up and run them.

The principle upon which HENDY'S PATENT CONCENTRATOR is constructed, is the only true and mechanical one for the purpose of concentration.

**CENTRIFUGAL FORCE AND GRAVITATION,**

Combined as they are in this machine, CANNOT FAIL TO ACCOMPLISH the object sought.

Many certificates from proprietors of mills, who have this Concentrator in use, can be had, if required, giving the most flattering accounts of its efficiency.

A most substantial evidence of its worth is the fact that the proprietor is receiving repeated orders from those who are using them, and who have tested their merits.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit. THEY ARE WARRANTED TO WORK SATISFACTORILY.

**CAUTION.**

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.

Feb. 1st, 1867.

(Special Notice.)

**To Quartz and Cement Miners.**

I have received several communications from persons residing in different parts of the country, requesting me to send them a full description of my "Oro Pulverizer," its uses, capacity, etc., and as the PRESS reaches nearly every prominent miner on the coast, and will consequently come under the immediate notice of most of my correspondents, I propose, by your kind indulgence, to give them a general reply through its columns.

The description of the machine, now in operation here, is about as follows: The hollow cylinder, made of cast iron, open at both ends, is three feet in diameter, and is twenty inches high by one inch thick, weighing 600 pounds. It resembles a large tub without a bottom. The bed plate, also of cast iron, four feet long, with rounded ends, is three feet two inches wide, with a short flange on each side, by one inch thick, weighing 400 pounds, and looks like the top of a smooth table. The counter shaft is four and a half feet long by three inches in diameter, having a fly-wheel on it weighing 400 pounds, and two pulleys, one fast and the other loose, weighing about 200 pounds. On one end of the shaft there is a small wheel or crank containing a crank-pin, like that of an engine. There is a wrought iron band around the middle of the cylinder, which is so arranged that it may be tightened or loosened as circumstances may require. There is a wrought iron rod, eight feet long, connecting the band with the crank-pin, which works like the piston rod of an engine. The machine has a foot stroke, and when in proper motion, the cylinder slides forward and back on the bed-plate, between the guides, at the rate of from 100 to 110 strokes per minute. This quick motion shakes the coarse material around and together so violently that it is rapidly reduced, by attrition principally, to an almost impalpable powder, and in this condition it begins to escape under the lower edge of the cylinder, the weight of which completes the pulverizing so thoroughly that the material comes out as fine as flour. The advantages of these results to the experienced millman need no further comment.

The machine will require about a two-horse power to run it properly on heavy work; but on light work, such as sulphurets and sands, it will not take near so much; and I may answer that it will reduce all of the mineral and organic substances. I have already tested it on quartz, manganese, sulphurets, quartz sands, fire-brick, marble, gravel cement, plumbago, bone-ash, and soapstone, and in every instance have produced the most satisfactory results. As to its capacity, I am willing to guarantee that it will reduce at least three tons of gravel cement in twenty-four hours, by throwing out the larger stones or coarse gravel, as soon as the gold and cement is sufficiently rubbed off from the same, and it will reduce a ton of ordinary, or a ton and a half of decomposed quartz, in the same length of time. Sulphurets and quartz tailings can be worked even faster than the latter. All other minerals or ores may be reduced with equal or greater facility, according to the nature of the substance. It will do more work by wet than it will by dry crushing. The machine is plain and simple, is easily attended to, and its wear is uniform and very slow. Its working qualities may be daily witnessed at the Franklin Foundry, on Fremont street. Yours truly,

JAMES HITCHENS.

INDIAN WAR.—It is expected that during the coming summer Government will set itself seriously to the quieting of the Indians on the plains. It is high time. General Sherman, some time since, proposed that the Indians be restricted to districts north and south of the overland route. This, at least, should be done at once, however large a force might be required.

The new woolen knitting mill, on Turk street, in this city, is capable of making one hundred dozen pairs of "Shaker socks" per day.

**City Amusements.**

METROPOLITAN.—The attendance at this theatre proves the success of the Martini troupe in their efforts to please. This week the pantomimes of "Harvest Home" and "Soldier for Love" have been played, and although they have not the tricks of some others, they are full of fun. "Zampillero-station," by Paul Martini, is very graceful and well done. The "Vivandiere" and the vaudeville by the Howsons, make up a pleasant evening's entertainment.

OPERA HOUSE.—The varied and attractive bill offered on the occasion of Manager Maguire's benefit, was repeated on Tuesday night to enable those to witness it who failed to obtain admission the first evening. Wednesday evening "Griffith Gaunt" was presented, with John McCullough as Griffith, Mrs. Kate Dennis as Kate Feylon, Mrs. Jackson as Caroline Ryder, and Miss Coreoran as Mercy Vint.

ACADEMY OF MUSIC.—By request, Mrs. Weaver will give Readings at this house on Tuesday evening, February 1th.

**DEWEY & CO.**  
PATENT AGENTS,  
ENGRAVERS AND PUBLISHERS  
Mining & Scientific Press.  
CIRCULARS FREE.  
SAN FRANCISCO.

**Perry Davis' Pain Killer.**

ORIENT.—Having used and witnessed the beneficial effects of Perry Davis' Pain Killer, I take great pleasure in recommending it to the public as the very best Family Medicine with which I am acquainted. In this establishment are employed nearly one hundred persons, and your Pain Killer has been used with the most astonishing results. For four years not a single severe case of cholera, summer complaint or dysentery, but has yielded like magic to the curative powers of the "Killer;" and for cuts, bruises, etc., it is in almost daily use, and with like good effects.

JOHN TANNER,

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Sold by Druggists and all Dealers in Family Medicines. 4vt4-1m

**Remarkable Cure of J. Calwell,**

Who had all the symptoms of being in the last stage of consumption, by the use of ALLEN'S LUNG BALSAM.

DEATH, Hamilton County, Ohio, April 6, 1865.—MRS. HARRIS & Co's Cuts:—As I have reason to believe that Allen's Lung Balsam has been the means of restoring my health, I feel that the afflicted ought to know what it is doing. I was first attacked with a violent cough, attended with cold night sweats. My feet and limbs swelled. The above symptoms continued for months, until I became confined to my bed, and reduced almost to a skeleton. My physicians and friends considered my case as entirely hopeless; that I could not live. At this crisis I commenced to use Allen's Lung Balsam, which was strongly recommended to me for the cure of consumption. To the astonishment of all, I began to recover almost immediately, and in less than three months' time I gained sixty pounds. I owe all the use of Allen's Lung Balsam. I now enjoy good health. Respectfully yours, JAMES CALWELL.

Sold by all Medicine dealers everywhere. 4vt4-1m

**To Owners of Copper Mines and Smelting Works.**

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, desires a situation as Superintendent of an establishment for Smelting Copper. Address "W.," care of Mining and Scientific Press. 6vt4vt

**Brown's Filtering Heater!**

FOR PREVENTING INCORUSTATION IN STEAM BOILERS, purifies water from lime or any other impurities, saves fuel, saves the boiler, prevents explosion, and protects life and property. The cost of the Filter is soon saved by fuel and boiler—repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to 6vt4-4y AUSTIN A. WELLS, Agent.

**A. S. Hallidie & Co.,****MANUFACTURERS OF FLAT & ROUND WIRE ROPE.**

For Mining, Shipping, Ferry, AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach. SAN FRANCISCO.

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one fault, the bulk of the rope is split and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure to have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—Round Wire Rope—Iron or Steel, for Hoisting. Flat Wire Rope— " " " "

Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, saving in freight for remote localities. Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire Rope—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks supplied.

Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{3}{4}$  inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand.

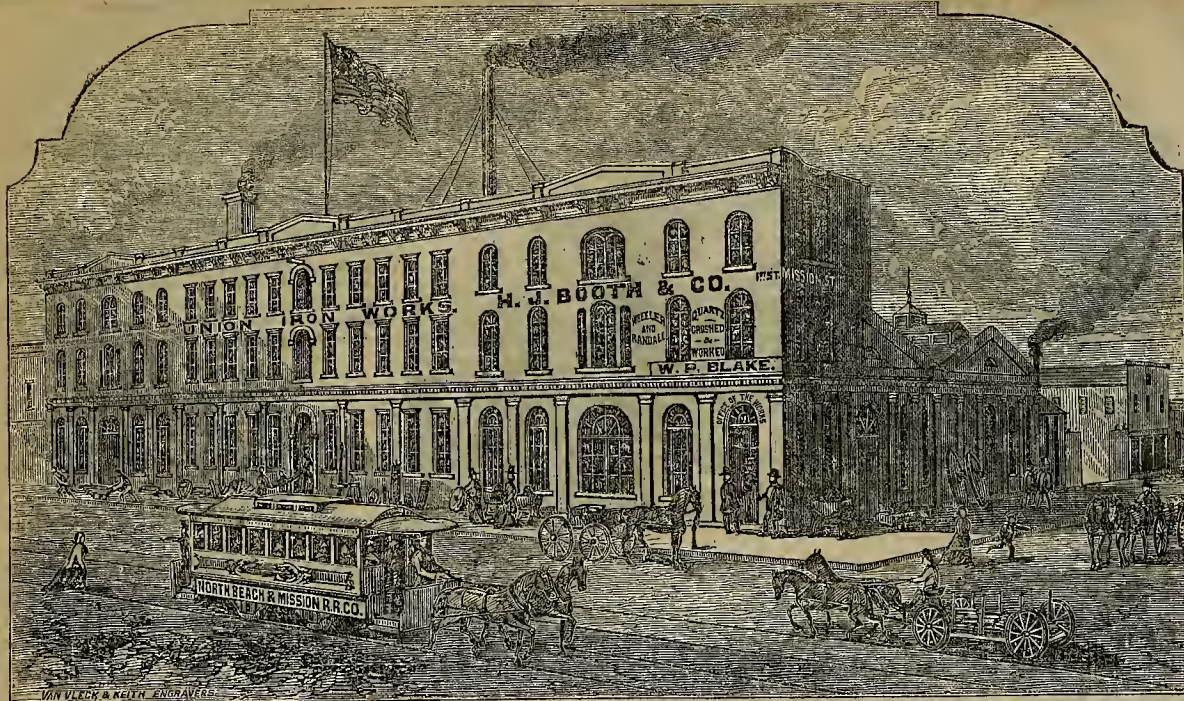
Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Gir. 100 ft. 100 ft. 100 ft. 100 ft. 100 ft.	Gir. 100 ft. 100 ft. 100 ft. 100 ft. 100 ft.	Gir. 100 ft. 100 ft. 100 ft. 100 ft. 100 ft.	Size Link, 100 ft. 100 ft. 100 ft. 100 ft. 100 ft.	Brk'g Wt. Str'n. Load. 100 ft. 100 ft. 100 ft. 100 ft. 100 ft.
2 1/2 1/2 1/2 1/2 1/2	2 1/2 1/2 1/2 1/2 1/2	2 1/2 1/2 1/2 1/2 1/2	2 1/2 1/2 1/2 1/2 1/2	2 1/2 1/2 1/2 1/2 1/2
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Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25vt13-6m3p

Favorable to Inventors.—Persons holding new inventions of machinery and important improvements, can have the same illustrated and explained in the MINING AND SCIENTIFIC PRESS, free of charge, if in our judgment the discovery is one of real merit, and of sufficient interest to our readers to warrant publication.





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**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curo Paw, Zenas Wheeler's improved flat bottom pan, Belkin's pan, Veatch's tubs, Frater's concentrators, Wakle's pans, Beers' pan, Cerman Barrels, Arastra Cearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Gams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all quantities of iron. All work done in the best manner at the lowest cash prices.

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STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight;  
without excessive friction, and never  
gets slack or leaky.

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NEW GRINDER AND AMALGAMATOR

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AMALGAMATOR AND SEPARATOR,  
Tyler's Improved Water Wheel,Giving the greatest power, at lower cost, than any  
Wheel in use. There are over 1,500 running,  
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KNOX'S AMALGAMATORS,

WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz  
mining, and being conversant with all the improvements,  
either in Mining or Milling, we are prepared to furnish, at  
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Steam Engines, Boilers,

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PACKING, for new and old cylinders, manufactured  
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SAN FRANCISCO.Has always on hand a general assortment of PICKS for  
Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE  
QUARTZ PICK, which is especially adapted to Quartz Min-  
ing, and guaranteed to give good satisfaction. 13v13-lyGEORGE T. PRACY,  
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SAN FRANCISCO.

STEAM ENGINE, FLOUR AND SAW MILL

And Quartz Machinery, Printing Presses,

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Special attention paid to Repairing. -32- qy-3

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Manufacturers of

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Quartz Machinery, Saw, Flour and Sugar Mills, Mining  
Pumps, Hoisting Gear, Agricultural Implements, etc.

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Wine, Cider, Cotton and Tobacco Presses  
of the latest Improved Patterns.

## STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and  
Dies warranted to be made of the best white iron.Dunbar's Improved Self-Adjusting Piston-  
Packing, requires no springs or screws; is always steam-  
tight; without excessive friction, and never gets slack or  
leaky.MACHINERY OF ALL DESCRIPTIONS  
Bought, sold, or exchanged. Bolt Cutting and Castings at  
the lowest market rates.

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THE only exclusively Boiler Making establishment on the  
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Old Stand, corner of Bush and Market streets, opposite  
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Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.Practical Machinists and Iron Founders,  
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## STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Re-  
quires no springs or screws; is always steam tight; without  
excessive friction, and never gets slack or leaky.

HANSCOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else  
Wheeler & Randall's New Grinder and  
Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,  
Giving greater power, at lower cost, than any wheel in use  
Send for one of our circulars, giving full details.  
All Wheels warranted to give the power as set forth, or  
the money will be refunded.Sole makers for this coast of the "Pendergast  
White Iron Stamp Shoes and Dies.None genuine unless obtained from us. Every one war-  
ranted.  
Patented Machinery of all kinds will be furnished by us  
at market prices. Particular attention given to drawings  
and specifications of machinery, which will be made to  
order. The patronage of the public is respectfully solicited.  
13v12

## FULTON

Foundry and Iron Works.

HINCKLEY &amp; CO.,

MANUFACTURERS OF

## STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds  
of Machinery.Nos. 45, 47 and 49 First street, between Market and Mis-  
sion street, San Francisco. 3-qy

## NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

MARINE,

Locomotive,

And all kinds of

HIGH PRESSURE

Steam Boilers

MADE.

All Boilers guaranteed and

tested by U. S. Boiler In-  
spector before sent out of  
the Shop, at Shop expense.

All kinds of Sheet Iron and

Water Pipe, Coal Oil

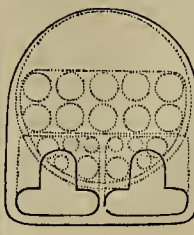
Sills, Wrought Iron

Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired

D. CAMERON.



6v12-ly

**EARTHQUAKE IN ENGLAND.**—An English paper refers to certain damage recently done, as was supposed, by a pitfall, as due to an earthquake; and says it was felt more or less distinctly throughout a considerable extent of country. We quote: "The injury done at Crook, it appears, is more serious than at first reported; the earthquake wave passed south by Wilton Park, Chorley and Toft Hill, where the shock has been severe, for on top of that hill we now have a valley, the turnpike road having sunk many feet. Some houses are as bad as any in Crook, whilst in many fields great yawning chasms have appeared, several feet deep. Next we trace it to Ramshaw Hough across Cockfield Fell to Wigglesworth; and here the shock must have been awful indeed, for whole fields have disappeared and sunk into the yawning depths below; and, strange as it may appear, here the wave has been checked in its southern course, and, turning west by north, has followed the coal field right up the Guanless, destroying much land and many houses, besides injuring several roads at Lynesack, Copley, Rowntree, and other places."

**STRUCK BY A FALLING STAR.**—During the meteoric shower in November, a star-gazing waiter in London, "got hit." It must be so, because the editor of the London *Morning Advertiser* says that Pike told him that while standing in the middle of the street, between Shoe Lane and Salisbury Court, with no one near him, and gazing upward, he became aware of a burning sensation in the neck, upon which he tore at his neck-cloth, and the next moment the burning substance passed down his left breast, scorching the shirt in all its course and inflicting three small but severe burns on the flesh, with one large wound.

## TOWNE &amp; BACON,

Book and Job Printers,

Have the Largest Office,

Do the most work,

And do it better

Than other offices

In this City,

536 Try them

With a Job,

And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,

Over Pacific Fruit Market.

## CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,  
SAN FRANCISCO.ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal  
Castings, Brass Ship Work of all kinds, Spikes, Sheathing  
Nails, Knipper Braces, Hinges, Ship and Steamboat Belts and  
Gears of superior tone. All kinds of Cocks and Valves, Hy-  
draulic Pipes and Nozzles, and Hose Couplings and Con-  
nections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL.

[19v13-ly]

J. H. WEED.



## JAMES MACKEN,

COPPER SMITH,

No. 226 Fremont st., bet. Howard &amp; Folsom

All kinds of COPPER WORK done to order in the best  
manner. Particular attention paid to Steamboat, Sugar  
House and Distillery work.

Repairing promptly and neatly attended to.

13v11

## JOHN LOCHHEAD'S

Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT  
to order—Marine, Stationary, or Locomotive.HOISTING AND PUMPING ENGINES,  
PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc.

The attention of the parties engaged in shipping or inland  
navigation is called to the

## Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San  
Francisco for the last fourteen years, and enjoys the repu-  
tation of having built ONE HUNDRED AND SEVENTEEN  
STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery  
generally, made to order, and warranted to give perfect  
satisfaction in every particular. 25v12-3m



NEVADA STATE MINING LAW.—Mr. Nourse introduced a bill in the Nevada Senate on the 11th, to repeal the State law concerning "the location and possession of mining claims." The *Record* says the law is defective and unpopular, and should be repealed, yet it hopes another will take its place. The district mining laws are seldom complied with, or at least are easily suspended or altered by a meeting of miners hastily called, and as a consequence, there is constant confusion regarding titles, and endless litigation. It goes on:

"It will be useless for our Legislators to attempt to make a law that will be universally popular, whether it relates to mines or anything else. A law should be passed regulating the location of mines and providing for their recording in the office of the County Recorder in such a manner that titles can always be ascertained and correctly traced. \* \* \* Let it be simple and inexpensive, but requiring that before a location is admitted to record, a certain amount of development shall be made, which shall be described in the record. This will prevent the location of valueless claims, and always furnish evidence of title."

LARD.—In the transportation of large droves of hogs to the Cincinnati market by rail-cars, many of them are crowded, and crushed, and suffocated to death. These are purchased by manufacturers of lard. Covered with filth as they are, they are tumbled into immenso steam boilers or tanks, and steamed until the most beautiful "Pure Steam Refined Lard" is drawn from the boilers by means of faucets.

### Bell's Assay Office.

THE UNDERSIGNED, HAVING FORMED A COMPANY, under this day, would inform the former patrons and the public generally, that they will continue the ASSAY BUSINESS in all of its branches, at the old stand,

No. 512 California street,

One door west of Montgomery, San Francisco, with the same employees, under the name of Rogers & Brown. MR. EDWARD WOLLER, for the last seven years Assayer for Mr. Bell, will have charge of the Assay Department.

The Melting Department will be under the charge of MR. HENRY J. FISHER, for ten years in the United States Mint in this city and Philadelphia, and for the past seven years with Mr. Bell.

We would inform Photographers that we are prepared to work their chloride of silver and ashes from their paper clippings.

We have, in connection with our Assay business a MILL, and are prepared to

WORK GOLD AND SILVER ORES,

in quantities from 25 to 500 pounds; also, Assayers' Sweeps.

GEORGE E. ROGERS, H. W. BROWN.

October 13, 1866. 19v13 qllpar

### QUINCY HALL.

#### CLOTHING EMPORIUM!

515, 517 and 519 Washington street, (Near Montgomery), SAN FRANCISCO.

For a Dress Suit, A Business Suit, or A Working Suit, GO TO QUINCY HALL!

For Shirts, Collars, Drawers, Undershirts, Socks, Ties, Gloves, or any other FURNISHING GOODS, GO TO QUINCY HALL!

For Hats, Caps, Trunks, Valises and Carpet Bags, JUST GO TO QUINCY HALL!

If you want a SUIT MADE TO ORDER, of Foreign or Domestic Cloth.

ALWAYS GO TO QUINCY HALL!

IT IS THE LARGEST AND CHEAPEST CLOTHING HOUSE IN SAN FRANCISCO.]

All Goods Warranted as Represented

—AT—

### QUINCY HALL,

Nos. 515, 517 and 519 Washington street, 19v13-3m Next to Montgomery.

#### Attention! Attention! Attention!

Look to Your Health in Time!

HEALY'S RHEUMATIC LINIMENT FOR THE SURE and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the Age. Are you afflicted with Rheumatism?

Use Healy's Rheumatic Liniment!

Have you the Headache?

Use Healy's Rheumatic Liniment!

Have you a Sore Throat?

Use Healy's Rheumatic Liniment!

Have you the Toothache?

Use Healy's Rheumatic Liniment!

Are you subject to Cramps?

Use Healy's Rheumatic Liniment!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. E. L." is stamped on the cork, and the fac simile of FRANK HEALY'S signature on the outside wrapper of the bottle.

Wholesale Agents—Gracie & Brigham, and R. H. McDonald & Co., San Francisco, and at retail by all respectable Drugists and Grocers. Price, \$1.

2v14f-10p



### THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequaled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

GODDARD & COMPANY.

### ROWLAND, WALKER & CO.,

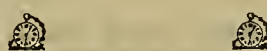
#### GROCERS,

Nos. 516 and 518 Washington street,

Are offering a complete assortment of GROCERIES at the LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits. 22v13-1y

#### NEW YORK PRICES.



#### C. E. COLLINS,

No. 603 Montgomery street, San Francisco.

#### EXCLUSIVE AGENT

—FOR THE—

#### AMERICAN WATCH FACTORY.

A large assortment of these

#### Superior Watches,

In Gold and Silver Cases,

Constantly on hand, and sold at Factory prices. Also,

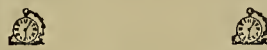
ENGLISH AND SWISS WATCHES,

Imported directly from the Manufacturers.

The American Company are now making

VERY FINE WATCHES FOR LADIES.

A large assortment of Gold Chains and Jewelry. 25v18-6m



#### NEW YORK PRICES.

#### REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

#### PRICES REDUCED!

These arms have been purchased by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action, Repeaters, and vest-pocket Pistols, with copper ammunition. Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Cases—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Case. All the new models for sale very low. 12v13f

ALBERT E. CRANE.

Economy in Advertising.—The Mining and Scientific Press is the best and most economical mining advertising medium in this city. Our terms are less than one-half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Publishers, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

ALBERT E. CRANE.

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### NATIONAL

#### Insurance Company!

OF SAN FRANCISCO.

Office, No. 408 Montgomery street, (Near Calloway).

MARINE INSURANCE—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.

FIRE INSURANCE—Upon Buildings, Merchandise, Furniture, Kents, Vessels in Port and their Cargoes, and other Insurable Property.

Capital (Paid up) --- \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

WILLIAM PIERCE, President. D. W. C. THOMPSON, Vice-President. W. W. WIGGINS, Secretary. A. NOYES, Marine Officer.

EXECUTIVE COMMITTEE: Albert Diblee, Chairman, Joseph A. Donahue, John G. Bray, 22v13-4m

#### Pacific Law and Collection Office

W. H. ALLEN,

Attorney and Counsellor at Law,

Principal Office at Rooms 11, 12 and 13 Amory Hall Building.

502 Montgomery Street, San Francisco, Cal.

Agencies at every City and Town on the Pacific Coast.

Collections guaranteed with or without suit in all the cities and counties of the Pacific and Atlantic Coasts.

Legal advice will be given free of charge until after 1st January, 1867. Postage on letters asking advice must be paid both ways. 8v13-3m

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### CONNECTICUT

#### Mutual Life Insurance Co.

The Largest Life Insurance Company in the World.

ASSETS.....\$12,000,000.

#### THE CONNECTICUT MUTUAL

IS NOW THE LARGEST AND MOST PROMINENT LIFE Insurance Company in the world, and it has

The Largest Number of Members,

The Largest Amount Insured,

The Largest Surplus,

The Largest Business,

The Largest Income,

And as it obtains the LARGEST average rate of interest on its investments, and has had, through its whole history, the SMALLEST average expenses, it therefore affords insurance at LESS COST than any other Company.

The surplus premium (dividend) returned to Policy Holders during the current year is SIXTY PER CENT of the premium paid during the year ending 31st of January, 1863.

Insurance can be effected in this Company in all the forms desired, and to meet all the contingencies to which Life Insurance is applicable, among which are—

Whole Life Policies, by a continued annual life premium.

Whole Life Policies, by TEN annual premiums.

Endowment Policies, by a continued annual premium.

Endowment Policies, by a limited annual premium, for FIVE, TEN, FIFTEEN or TWENTY years.

Endowment Policies, made payable at any age stipulated.

ALL POLICIES issued by this Company are either non-forfeitable by their terms, or may be converted into those which are so, at the option of the insured.

This Company offers all the advantages of a CASH or NOTE Company. The assured are not required to give interest in part payment of the premium, but may, if preferred, pay the first four premiums in cash after which their dividends on Annual Premium Life, and Continued Premium Endowment Policies, will, if the past success of the Company is continued, reduce their premiums one-half.

When notes are given for Annual Life and Continued Endowment Premiums, no notes will be required after the fourth payment, and the returned surplus—dividends—will be applied as cash to the reduction of the annual premium.

None but Unexceptional Risks Accepted; and only upon ages between Fourteen and Sixty.

#### DIRECTORS:

JAMES GOODWIN, HENRY C. ROBINSON, GEORGE S. GILMAN, GUY R. PHELPS, MARCUS F. HOLMES, E. D. HIFFANY, New York. CHARLES F. THAYER, Boston.

N. M. WATERMAN, JOHN C. PALMER, E. B. WATKINSON, THOMAS SISSON, Z. PRESTON.

GUY R. PHELPS, President.

Z. PRESTON, Vice-President.

W. S. OLMSTEAD, Secretary.

O. W. POWERS, Actuary.

A. D. SMITH & CO.,

General Agents Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets, San Francisco. 17v13 p11

### Accidental Insurance!

#### The Accidental Insurance Company

OF NEW YORK,

ISSUES POLICIES INSURING AGAINST INJURIES OF all kinds, and death resulting from accident.

In case death does not result from the injury, the insured receives a weekly compensation as long as he is disabled (not to exceed twenty-six weeks).

#### ONE YEAR POLICIES.

\$5 will buy Policy for \$1,000, with weekly compensation of \$5.

\$10 will buy Policy for \$2,000, with weekly compensation of \$10.

\$50 will buy Policy for \$10,000, with weekly compensation of \$50.

#### SHORT TERM POLICIES.

Policies will also be issued for any other amounts within the limits before stated, for periods of one to six months, at rates in tenths of the Annual rate, as follows:

1 month, 2-10. 4 months, 5-10.

2 " 3-10. 5 " 6-10.

3 " 4-10. 6 " 7-10.

#### GENERAL ACCIDENT TICKETS.

This Company also issues Tickets which are sold by many of its Agents at Hotels and Ticket Offices through the country.

They make Insurance for \$3,000, and \$25 per week compensation, against Accidents of every description, Travelling or otherwise; good for one to six days, as required, at TWENTY-FIVE CENTS PER DAY.

They are not simply Travelers' Insurance Tickets which cover only injury or death, the result of an "Accident to the Public conveyance in which the assured may at the time be travelling," but they are GENERAL ACCIDENT TICKETS.

#### SEA VOYAGE POLICIES

Are issued, covering the risks of travel to European and other Ports. Rates varying with the season, and the voyage to be taken. Information can be had of the Company or its Agents.

The Company has a PAID UP CASH CAPITAL OF \$250,000. One hundred thousand dollars deposited with Wm. Barnes, Esq., Superintendent of the Insurance Department of the State of New York, and the remainder securely invested in Stocks in the hands of the Company.

#### INDUCEMENTS.

The rates of Premium are very low. The Plan is so simple that any one can comprehend it.

No MEDICAL EXAMINATION is required, and those who have been rejected by Life Companies, in consequence of hereditary or other diseases, can effect Insurance in this Company at a very small cost.

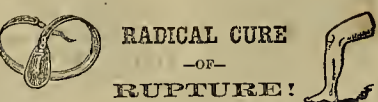
No better or more satisfactory use can be made of so small a sum.

For Policies or further information, apply to

A. D. SMITH & CO.,

General Agents for the Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets, San Francisco. 17v13



#### RADICAL CURE

—OF—

#### RUPTURE!

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 322 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

#### DR. A. FOLLEAU

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.

He has no connection with any Agency. 8v13-1y1p

#### Quartz Mill Construction and

#### Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN engagement as a working Superintendent in the construction or operation of a Quartz Mill. Has had five years steady and successful experience in working ores in Washoe, and is practiced in saving sulphurets and the treatment of rebellious ores. Is prepared to furnish references for all the necessary qualifications of an intelligent, faithful and reliable quartz operator. Address F. M. SHAW, San Francisco, care Mining and Scientific Press. 14v13-1m







**Cherokee Flat Blue Gravel Mining Company,**

Cherokee Flat, near Oroville, Butte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of January, 1867, an assessment of five (\$5) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Company's office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. P. SENAULT, Secretary.  
Office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, Cal. feb2

**Nonpareil Gold Mining Company, Location of**

Works: Tuolumne County, California.

Notice.—There are delinquent, upon the following described stock, an account of assessment levied on the twenty-sixth day of December, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. B. Gould	31	5	\$7 50
E. A. Eldridge	6	10	15 00
John P. Raymond	10	10	15 00
John P. Raymond	11	10	15 00
John P. Raymond	12	10	15 00
John P. Raymond	13	10	15 00
John P. Raymond	14	10	15 00
John P. Raymond	15	10	15 00
John P. Raymond	16	10	15 00
John P. Raymond	17	10	15 00
John P. Raymond	18	10	15 00
John P. Raymond	19	10	15 00
John P. Raymond	20	10	15 00
John P. Raymond	21	10	15 00
John P. Raymond	22	10	15 00
John P. Raymond	23	10	15 00
John P. Raymond	24	10	15 00
John P. Raymond	25	10	15 00
John P. Raymond	26	10	15 00
John P. Raymond	27	10	15 00
John P. Raymond	28	10	15 00
John P. Raymond	29	10	15 00
John P. Raymond	30	10	15 00
John P. Raymond	31	10	15 00
John P. Raymond	32	10	15 00
John P. Raymond	33	10	15 00
John P. Raymond	34	10	15 00
John P. Raymond	35	10	15 00
John P. Raymond	36	10	15 00
John P. Raymond	37	10	15 00
John P. Raymond	38	10	15 00
John P. Raymond	39	10	15 00
John P. Raymond	40	10	15 00
John P. Raymond	41	10	15 00
John P. Raymond	42	10	15 00
John P. Raymond	43	10	15 00
John P. Raymond	44	10	15 00
John P. Raymond	45	10	15 00
John P. Raymond	46	10	15 00
John P. Raymond	47	10	15 00
John P. Raymond	48	10	15 00
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John P. Raymond	93	10	15 00
John P. Raymond	94	10	15 00
John P. Raymond	95	10	15 00
John P. Raymond	96	10	15 00
John P. Raymond	97	10	15 00
John P. Raymond	98	10	15 00
John P. Raymond	99	10	15 00
John P. Raymond	100	10	15 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-sixth day of December, 1866, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Cobb & Sinton, No. 407 California street, San Francisco, California, on the eighteenth day of February, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

S. A. ELDRIDGE, Secretary.  
Office, 423 Washington street, (Room No. 5) San Francisco, California. feb2

**San Marcel Silver Mining Company, Location of**

Works: San Marcel, District of Bernillo, State of Sonora, Mexico.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of January, 1867, an assessment of fifty (\$50) per share was levied upon the assessable stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the thirtieth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. feb2

**Yosemite Mining Company, Oro Flao District,**

Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-sixth day of January, 1867, an assessment of one dollar and seventy-five cents (\$1.75) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or D. H. GOWEN, 402 Broadway, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the first day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-third day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. O. PUTNAM, Secretary.  
Office, N. E. corner Front and Jackson streets. feb2

**Arizona Consolidated Mining Company, Eucla**

District, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment of fifty (\$50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, No. 511 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. W. BUNNELL, Secretary.  
Office, No. 511 Clay street, San Francisco. jalg

**Big Blue Lead Gold and Silver Mining Com-**

pany, Cove District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of January, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable January twenty-sixth, 1867, in United States gold and silver coin, to the Secretary, M. G. ELMORE, at his office, No. 303 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twelfth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 303 Montgomery street, San Francisco. jalg

**STOCK CERTIFICATES,****STOCK TRANSFER JOURNALS,****STOCK LEDGERS,****ASSESSMENT RECEIPTS,**

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed by order on short notice, at moderate prices, at the office of

THE MINING AND SCIENTIFIC PRESS.

**Cosala Silver Mining Company, Cosala District,**

State of Sonora, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the seventeenth day of December, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Arcey, Walter W.	163	25	\$50 00
Arcey, Walter W.	164	25	25 00
Arcey, Walter W.	165	25	25 00
Kleinman, T. P.	263	20	20 00
Laidley, James	264	20	20 00
Laidley, James	265	20	20 00
Murphy, A. H.	266	20	20 00
O'Brien, Thomas	267	20	20 00
Rice, I. M.	268	20	20 00
Thompson, I. D.	269	20	20 00

And in accordance with law, and an order of the Board of Trustees, made on the seventeenth day of December, 1866, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction rooms of Maurice Dale & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the eleventh day of February, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, Cal. jalg

**Evoca Consolidated Copper Mining Company,**

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of January, 1867, an assessment of twenty-five cents (25) per share was levied upon the assessable capital stock of said Company, payable on the eleventh day of February, 1867, in United States gold and silver coin, to the Treasurer, A. E. TRAYNE, at the office of the Company, at No. 532 Merchant street, Room No. 3, in the City and County of San Francisco, State of California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twelfth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the thirtieth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. S. CLYDE, Secretary.  
Office of Company, No. 532 Merchant street, Room No. 3, San Francisco, California. jalg

**George Washington Gold and Silver Mining**

Company.—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 16.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirty-first day of December, 1866, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of February, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. jalg

**Hancom Copper Mining Company, Low Di-**

vide District, Del Norte County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-second day of December, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Ryerson, John	12	1	\$ 15
Calderwell, Charles	50	1	7 1/2
Dudley, Ebbett	2	100	30
Olney, George K.	74	100	15 00
Keefe, Simeon	88	13	25
Power, William	2	6	10
Reed, Sarah N.	11	26 1/2	4 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of December, 1866, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the Secretary's office, No. 609 Market street, San Francisco, Cal., on Friday, the eighth day of February, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. S. SWEET, Secretary.  
Office, No. 609 Market street, San Francisco, Cal. jalg

**Hope Gravel Mining Company.—Location of**

Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1867, an assessment (No. 12) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable on the seventeenth day of January, 1867, in gold coin of the United States, to DAVID WILDER, Secretary, at the office of the Company, No. 529 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on Saturday, the twenty-third day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. jalg

**Julia Gold and Silver Mining Company, Storey**

County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of January, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, 607 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of February, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twelfth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. NOEL, Secretary.  
Office, 607 Washington street, San Francisco, Cal. jalg

**Josephine Copper Mining Company, Location**

of Works: Gopher District, Calaveras County, California.

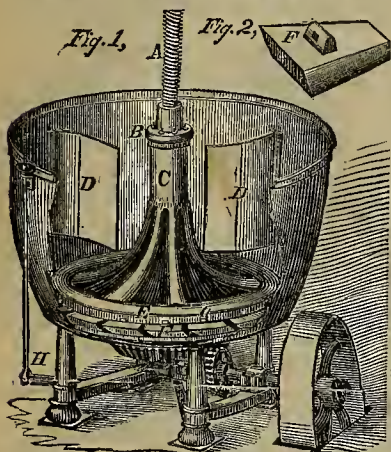
Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-eighth day of November, 1866, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J. S. Cronise	174	50	\$50 00
J. S. Cronise	175	50	50 00
J. S. Cronise	176	50	50 00
J. S. Cronise	177	50	50 00
J. S. Cronise	178	50	50 00
J. S. Cronise	179	50	50 00
J. S. Cronise	180	50	50 00
J. S. Cronise	181	50	50 00
J. S. Cronise	182	50	50 00
J. S. Cronise	183	50	50 00

Names.	No. Certificate.	No. Shares.	Amount.
J. S. Cronise	184	50	50 00
J. S. Cronise	185	50	50 00
J. S. Cronise	186	50	50 00
J. S. Cronise	187	50	50 00
J. S. Cronise	188	50	50 00
J. S. Cronise	189	50	50 00
J. S. Cronise	190	50	50 00
J. S. Cronise	191	50	50 00
J. S. Cronise	192	50	50 00
J. S. Cronise	193	50	50 00
J. S. Cronise	194	50	50 00
J. S. Cronise	195	50	50 00
J. S. Cronise	196	50	50 00
J. S. Cronise	197	50	50 00
J. S. Cronise	198	50	50 00
J. S. Cronise	199	50	50 00
J. S. Cronise	200	50	50 00
J. S. Cronise	201	50	50 00
J. S. Cronise	202	50	50 00
J. S. Cronise	203	50	50 00
J. S. Cronise	204	50	50 00
J. S. Cronise	205	50	50 00
J. S. Cronise	206	50	50 00
J. S. Cronise	207	50	50 00
J. S. Cronise	208	50	50 00
J. S. Cronise	209	50	50 00
J. S. Cronise	210	50	50 00
J. S. Cronise	211	50	50 00
J. S. Cronise	212	50	50 00
J. S. Cronise	213	50	50 00
J. S. Cronise	214	50	50 00
J. S. Cronise	215	50	50 00
J. S. Cronise	216	50	50 00
J. S. Cronise	217	50	50 00
J. S. Cronise	218	50	50 00
J. S. Cronise	219	50	50 00
J. S. Cronise	220	50	50 00
J. S. Cronise	221	50	50 00
J. S. Cronise	222	50	50 00
J. S. Cronise	223	50	50 00
J. S. Cronise	224	50	50 00
J. S. Cronise	225	50	50 00
J. S. Cronise	226	50	50 00
J. S. Cronise	227	50	50 00
J. S. Cronise	228	50	50 00
J. S. Cronise	229	50	50 00
J. S. Cronise	230	50	



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Millers' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

## V. CUSHING, Agent

—FOR THE—

## Purchase &amp; Shipping of Machinery

OF ALL KINDS.

Especially attention given to Quartz Mill Machinery and Findings, and Miners' Material of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to—

Governor F. F. Low; C. T. Meador, Stockton; Jacob Underhill & Co., San Francisco; J. W. Slove, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco.

HUNTER'S  
IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphurets ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
PACIFIC FOUNDRY,  
1v1 San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.  
PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,

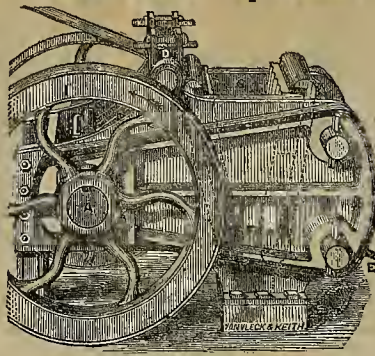
For Feeding Boilers.

STODDARD'S IRON WORKS,  
Beale Street, San Francisco.

22v13-3m

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this improved Machine for Breaking or Spalling Quartz or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low terms:

No. 1.—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price \$600  
No. 2.—Or 16-inch Crusher, capable of similarly pulling through five to six tons per hour..... \$850  
No. 3.—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour..... 1,200

EXPLANATION OF THE ABOVE ENGRAVING. The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass over it. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

JAMES BRODIE, Esq., San Francisco.—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,

Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be reduced to the sum of \$100 per Barrel.

A diagram, with explanation of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

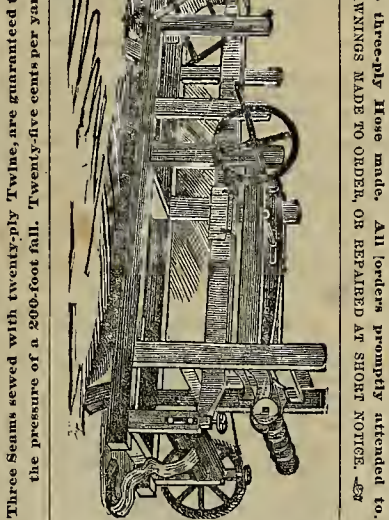
BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers. A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866.

BRODIE & R. A. DOLLE  
Express Building, 312 Montgomery street,  
San Francisco.PATENT HYDRAULIC HOSE SEWING  
By S. HOWARD,

12v13mf

Express Building, 312 Montgomery street, San Francisco.

Three seams sewed with twenty-five Twine, are guaranteed to stand the pressure of a 200-foot fall. Twenty-five cents per yard.



No. 326 DAVIS STREET, San Francisco.

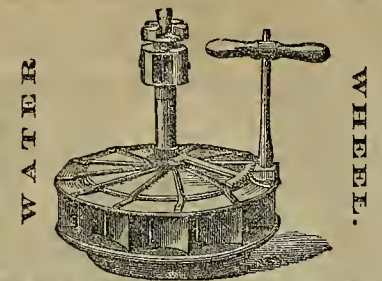
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## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission. Ores, in lots not exceeding 2,000 pounds, tested by  
G. W. STRONG, Assayer,  
22v13

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED IN THE United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland, (Mill Clear Lake); Morgan Corliss, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular, to  
KNAPP & GRANT,  
Agents for California.

26v13-1yq 310 Washington street, San Francisco

## Hunt's California Pump

Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years. Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 28 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Irrigating, Saw Frames, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.

PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3.—3-inch cylinder, 6-inch stroke.....	\$30 00
No. 4.—3½-inch cylinder, 6-inch stroke.....	35 00
No. 5.—4-inch cylinder, 6-inch stroke.....	45 00
No. 6.—5-inch cylinder, 8-inch stroke.....	60 00
No. 7.—5½-inch cylinder, 12-inch stroke.....	80 00
No. 8.—6-inch cylinder, 12-inch stroke.....	90 00

For further particulars, send for Circular.

E. O. HUNT,  
21v13mf 28 Second and 110 Jessie streets, San Francisco.

BRUCKNER'S

## Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

## The Mechanics' Institute.

Patented December, 1866.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which

GREATLY SIMPLIFIES THEIR OPERATION,

and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market street, San Francisco.

J. MARSHALL W. WILIE.

## GLASGOW

## IRON AND METAL IMPORTING CO.,

No. 27 Fremont street,

SAN FRANCISCO.

Beg to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined

Bar Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes,

GAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market.

Country Orders punctually attended to. 19v13-q

## To Quartz Miners and Others.

NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, (which I have called the

HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for. 19v14-3m

JAMES HITCHENS.

[Written for the Mining and Scientific Press.]  
The Value of Pans in Working Auriferous Quartz.

MESSRS. EDITORS:—In many of the quartz mills in this State which have come under my observation during the past year, grinding and amalgamating pans are not used. Sometimes a 20-stamp mill is supplied with one or two small sized pans to work blanket tailings. Aside from these limited facilities all of the gold runs to waste, except what is saved inside of the battery, and on the copper plates outside of the same. To be sure we occasionally see a mill supplied with shaking tables, which is a very good auxiliary in saving gold and quicksilver, running to waste from the batteries.

Many millmen object to the use of pans because of the length of time required to work ores by that process. In working

ores that are free from sulphurets, and in which the gold is very coarse, the use of grinding and amalgamating pans may possibly be avoided without great loss; but in mines where the gold is very fine, and the rock more or less interspersed with rich sulphurets, it is utterly impossible, in my opinion, for the best kind of battery and shaking tables to save as much gold as could be saved by giving the ore the benefit of careful working in good grinding and amalgamating pans.

Let me give an illustration of my own experience in these matters. A few months since, a lot of ore taken from a mine in which I am interested, was worked at a mill having an excellent battery, with copper plates inside and outside of the same, and good shaking tables; and I will also add that the men who worked the ore were experienced miners and millmen, and I am well satisfied that they worked it as close as anybody could probably do with the same facilities. The result was eleven dollars per ton. To be sure the mill had limited facilities, by which a couple of tons or so of blanket tailings were saved from this lot of ore, assays of which show conclusively that they contain nearly as much gold as was saved from the battery and shaking tables. But what is the use of blanket tailings in a mill that has no facilities for extracting the gold from them; or, in other words, how many years longer is it required to learn millmen and quartz miners the necessity of completing their mills, before attempting to work gold or silver ores.

I would further state in reference to the working of this lot of ore, that the mill tailings, as they passed from the mill, have been proven to contain eighteen dollars to the ton.

Now this same kind of ore by being crushed and worked in Stewart's grinding and amalgamating pans, [elsewhere fully described in the present issue—Eds. Press] yields \$35 to \$40 per ton; and quite recently I had some ore from the same mine worked in one of the above mentioned pans which yields at the rate of \$80 per ton, being at least \$50 more per ton than could possibly be saved from the workings of a battery and shaking tables.

QUARTZ PROSPECTOR.

GREEN VALLEY, El Dorado Co., Jan. 22d, 1867.

[Written for the Mining and Scientific Press.]

## California Oak for Wine Casks.

EDITORS PRESS:—In your notice of my experiment for using our native white oak timber for wine casks, the word "thousand" has been substituted by mistake for hundred.

I am not aware of any wine cask having been made in California of one-third the capacity of "nine thousand gallons"; but the rapid increase of the wine-producing business will soon demand the construction of tuns holding tens of thousands of gallons each, and it will be most fortunate for the vine-grower if he can find timber at home suitable for the purpose.

It is generally supposed that the oak of this country is not only too porous for wine casks, but that it is so highly charged with tannic and gallic acids as to impart a taste to the wine; but I have found less leakage from new casks made of wood which grew on bottom land near Napa Creek, than from Eastern staves bought in San Francisco.

That the acids and astringent matter can be effectually deterged from the timber, I think is proved by the fact of my having kept stored in that kind of wood, for over a year, a delicate claret, the juice of the black Malvoine grape, and it has suffered no deterioration whatever, but continues to improve by age. Both lime and steam were used to cleanse the casks.

G. B. CRANE.

St. Helena, Cal., Jan. 27, 1867.



**THE METEORIC SHOWER TO AN ALPINE TRAVELER.**—The correspondent of the Springfield Republican was among the Alps at the time of the November star shower. We copy a part of his description of the scene which he witnessed:

About one o'clock in the morning the signal was heard, and we soon gathered around our sentinel, on a rocky ledge that commanded a view of every quarter of the heavens. The clouds by that time became numerous and thick, but would, now and then, separate in the most tantalizing manner, and reveal for a moment the glorious scene beyond. Meteor succeeded meteor with such rapidity, that the account kept was almost worthless, so much did the different counts vary. Many strikingly large and brilliant meteors were observed, but their course could not be carried far by the reason of the many clouds. A few, twice the size of Venus, apparently, were seen, but most were of inferior brilliancy. Long trails of luminous matter marked the course taken by many, and these "tails" often remained long after the meteor itself had disappeared. They were, in fact, often more brilliant than the meteor, and sometimes seemed to have more than a single head, as if two or more had blended together. Many of these trains must have been, though their length could not be seen by reason of the clouds, at least twenty degrees long. The meteors that we were fortunate enough to have seen, seemed to all come from the constellation Leo. I have no doubt that, had the night been clear, we should have seen thousands. As it was, before the clouds had entirely covered the sky, we saw enough to know that the grandest exhibition of the kind that could be imagined was there transpiring, thus adding another proof of the accuracy of astronomical predictions.

The *Alt* says that a San Francisco capitalist recently caused an examination of the Savage mine by an expert, who made the following report: "From a most critical examination, and not making any allowance for the ore remaining above the sixth station, there is in sight over \$2,000,000 in dividends. This is no guess work, but from measurements of the ore as actually developed by drifts and winzes."

THE GRANITE FLOURING MILLS, at Folsom, were destroyed by fire on the 26th January. They cost \$140,000.

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No. 655 Howard Street, between Second and Third,  
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15v13 6m17

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A Largest Size (half medium) RUGOLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash--lowest price. Warranted. Apply to  
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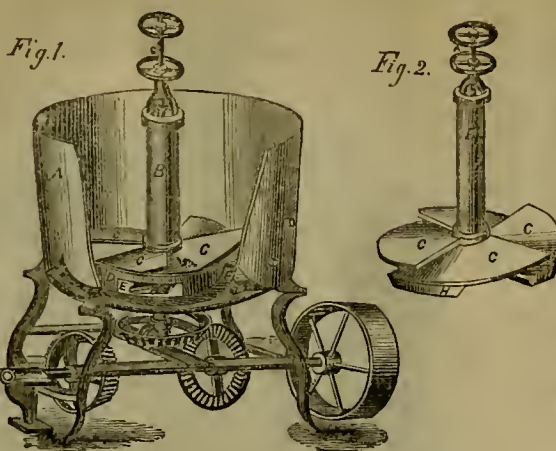
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Hydraulic and Artesian Well Pipes in the best work-  
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made large additions to my stock of machinery for that  
branch of business, I am prepared to fill all orders with dis-  
patch, and guarantee entire satisfaction. I also manufacture  
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### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw miller, and its shoes. The letters show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the miller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the miller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the miller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada.

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THOSE INTERESTED WILL FIND IT TO THEIR AD-  
vantage to call on MR. WILLIAM SLOSSON at Prof.  
W. P. Blake's Office, and obtain a Business Circular, just  
published by the WURTZ AMALGAMATION COMPANY, of  
New York, who have secured, under the Patents of Prof.  
Henry Wurtz, the sole and exclusive right, to the use of so-  
dium in amalgamation. Mr. Slosson is prepared to supply  
the licenses of the Company, with the material for applying  
this new and wonderful discovery, by which, in the words  
of President Barnard, of Columbia College, "Two grains of  
gold may be gathered where but one was before." 19v13-2m



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material, and contains nothing that will injure the finest  
fabric. Equally as good for washing in hard as soft water.  
One pound will make three gallons of beautiful soft soap.  
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CANNES, GOLD SCALES, CHEMICAL GLASSWARE, and  
every article required for ASSAY OFFICES, LABORATO-  
RIES, etc. We have given this branch of our business par-  
ticular attention, to select such articles as are necessary  
in the development of the mineral wealth of this coast.  
A Full Assortment of DRUGGISTS' GLASSWARE and  
DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, con-  
stantly on hand.  
San Francisco March 6, 1865 11v10-1f

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ical Grounds,

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Schools and Charitable Institutions, accompanied by guar-  
dians, free on Mondays and Fridays. 23v13qr

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THIS PREPARATION HAS BEEN USED AND RECOM-  
mended by some of the most prominent members of the  
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For the removal of DANDRUFF, SCURF, for preventing  
the Hair from falling off, and for producing a new growth,  
IT IS WITHOUT A RIVAL.

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nying each bottle. Prepared by

W. E. MAYHEW, Druggist,  
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He gives his personal attention to the preparation of  
Physicians' prescriptions.

Also, has constantly on hand a choice assortment of  
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portant Lectures on FUNCTIONS and DISORDERS of  
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### THE BEST BLOOD PURIFIER KNOWN.

Persons that are troubled with Rheumatism,  
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Pimples, Bells, or any of the many diseases that  
originate from Impure Blood, would find it much  
to their advantage to give this justly celebrated  
article a trial. One or two bottles are quite suf-  
ficient to convince the most skeptical of its mer-  
its. It contains neither Spirit, Arsenic nor Mer-  
cury, which cannot be truly said of any other  
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SHEPARDSON & GATES, Prop'rs.  
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### Abdominal Supporters!

### Shoulder Braces, Etc., Etc.

WE WOULD CALL THE ATTENTION OF DEALERS  
and others to our complete assortment of these goods,  
including Bartlett & Bateman's Celebrated BALL AND  
SOCKET REVERSIBLE TRUSS, which is decidedly the  
best article ever introduced into the market. By a com-  
bination of the movement of the ball and socket, and the  
movable arm, any desired angle may be obtained. Call and  
examine for yourselves. A liberal discount to the trade.  
SHEPARDSON & GATES, Agents.  
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### Rheumatism!!

### Still Another Witness!

Lafayette, Cal., Sept. 19, 1866.  
(While Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years,  
been afflicted with Chronic and Inflammatory Rheumatism,  
and the sufferings and tortures I endured in consequence  
cannot be told. I have, at an expense of thousands of dol-  
lars, employed many physicians, both in this country and  
in Europe (where I was born and resided many years),  
among which were several eminent professors of medicine,  
and I experienced no benefit from their treatment, more  
than at times a slight and temporary relief.  
About two years ago I was induced, by some persons who  
had been cured by it to use Richard's Remedy for Rheuma-  
tism. It is enough to say that I was almost immediately re-  
lieved, and that I have not suffered with it since. I keep  
the medicine on hand, and, on the first approach of any  
returning symptoms, I take a few doses, which invariably  
puts it to flight. I therefore cordially recommend it to the  
afflicted as an unfailing remedy for Rheumatism.  
FRED'K FABER.

RICHARD'S REMEDY is for sale by  
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And by Druggists generally.

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—AND—

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STEAMER DAY.

### REPORT

—OF THE—

### COMMITTEE

—ON—

### SEWING MACHINES!

### California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY:—  
Your Committee on Sewing Machines beg leave to re-  
port that we have examined the several Sewing Machines  
on exhibition, (the Grover and Baker, the Wheeler &  
Wilson, and the Florence,) and find that

### FOR GENERAL FAMILY USE

—THE—

### "FLORENCE"

—IS—

### "THE BEST."

(Signed) J. N. ANDREWS,  
THOMAS C. MCNEALE,  
L. ELKUS.

If there is a FLORENCE SEWING MACHINE within  
one thousand miles of the San Francisco Office, that is not  
working well and giving perfect satisfaction, it will be at-  
tended to, if I am informed of it, without expense to the  
owner.

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General Agent, 111 Montgomery street, San Francisco.

17v13







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SAN FRANCISCO, SATURDAY, FEBRUARY 9, 1867.

VOLUME XIV.  
Number 6.

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Dr. Kellogg read an elaborate paper upon the "Fungi," being a continuation of remarks upon the subject made at a previous meeting, showing the use of certain species as an article of food, the intoxicating effects of some varieties, the destructive effects of others, those which not only the soft and hard woods are destroyed, but also solid masonry.

Prof. H. N. Bolander and Dr. C. A. Stivers made some remarks upon the geographical distribution and properties of a species of *Algae*.

Mr. L. Falkenau, of the Pacific Chemical Works, stated the result of certain chemical tests which he had made of the coloring matter exhibited by Dr. Behr at a previous meeting, and owing to the minute quantity of the material, he could only ascertain that weak and dilute acids did not attack the substance, while alkalis seemed to combine with it. As soon as a larger quantity could be obtained, he would continue his researches.

## Manufacturing Barrels by Machinery.

The growing demand on this coast for barrels and kegs of various kinds, has induced a number of capitalists to undertake this manufacture on an extensive scale, by machinery, the building for which will be a large two-story structure, now in a forward state of completion, by the side of the rope walk, on the Potrero, and at a point near which the Potrero and Bay View Railroad will pass over the walk, at a height which will clear the roof thereof by merely cutting a few inches from the ridge of the same. The parties interested in this new enterprise have gone about it with much deliberation, and an abundance of means. They have employed an expert to visit the principal manufactories of this kind in the Atlantic States, with the view of selecting the best and most improved class of machinery which has been fully tested by actual work. The machinery procured for this purpose consists of stove cutters, headers, planers, shapers, etc., all of which have been purchased and reached this city by a recent arrival. A steam engine of about 30-horse power, to drive the same, is nearly completed at the Union Foundry. The capacity of the works at the start will be 8,000 staves per day, which capacity will be increased as fast as the demand for barrels shall warrant the same. The timber for this manufacture will be drawn from various localities on this coast, from Oregon, Victoria, and the upper portions of Placer and Nevada counties in this State, from which latter locality it will reach this city over the Central Pacific Railroad and via the Sacramento river. This manufactory will turn out every kind of barrel or keg required by the various industries on the coast—from a common flour barrel or molasses keg to the most expensive wine cask. Various kinds of timber will be employed, suited to the different purposes for which the casks may be required.

This enterprise is one the want of which has long been felt in this community. There is no lack in our forests for material to work with, and it is quite evident that there is a wide and growing field for a profitable business on a much larger scale, even, than any which has yet been contemplated. There is no reason why California should import either barrels or material for making them, and the sooner we are able to supply our own wants in this particular, the better for all.

**SUIT FOR INFRINGEMENT.**—The case of W. A. Palmer, of Palmer, Knox & Co., Golden Gate Iron Works, of this city, versus Mead & McCane, foundrymen, of Silver City, Nevada, has been decided in favor of the plaintiff. This is the third trial; the others resulted in a similar decision. The suit was for an injunction on the manufacture of steam chests placed underneath amalgamating pans, for the purpose of treating the pulp and thereby increasing the efficiency of the pans in the reduction of ores.

**PERSONAL.**—We notice among the passengers for the East, by to-day's steamer, the name of Melville Attwood, of this city. No man among us has probably had more experience in mining operations on this coast, or become more generally and intimately acquainted with the rise, progress and future prospects of this great leading industry, than has Mr. Attwood. Coming to this country in 1852, as the manager of one of the earlier English mining companies, organized to operate in California, he brought with him a large experience in mining, gained in his native country and in Brazil. He continued in active employment as a mining manager until some five years ago, when he removed to this city, where he has since acted in the capacity of consulting mining engineer. His large experience, ripe judgment and well known probity, have secured for him the almost unlimited confidence of capitalists, and more money has probably been invested in mining operations, on his judgment, than that of any other man in California. We have had the pleasure of an intimate acquaintance with Mr. Attwood, for some ten or twelve years, and so far as our information extends, every enterprise which has thus far been undertaken under his advice, and been fully carried out, has proved a success. Mr. Attwood was the first person to make known the true character and value of the famous Comstock lode of Washoe; and his knowledge and judgment has been of inestimable value to stockholders in the various companies along the line of that lode, who have availed themselves of his counsels in selecting the proper time for purchases or sales of stock in that remarkable series of mines. In addition to a full and thorough knowledge of our mineral resources, progress and necessities, Mr. A. carries with him to England models of machinery, plans of mills, etc., with which he will be able to convey to the capitalists of that country a full and intelligent idea of our resources, and the flattering prospects they hold out for profitable enterprise, when investments are made with judgment and conducted with that skill and experience which Europeans so well know how to appreciate and turn to advantage. Mr. Attwood visits his former home, at this time, in consequence of the severe domestic affliction with which he has recently been visited, and which has deprived an interesting household of a maternal head. He takes with him his two daughters, hoping that travel and a change of scene may once more bring to blooming cheeks that glow of health which was theirs before the fell destroyer entered their happy home and laid his hands heavily upon their earthly hopes and support. He proposes to return with his charge early in the ensuing fall. During his absence, he will visit and carefully inspect all such mining and metallurgical operations as he may think will afford him useful information, or hints which may be turned to the advantage of Californians. He will take full notes of the same, and communicate them to the public through the *MINING AND SCIENTIFIC PRESS*. Our readers may therefore expect some valuable information from his pen, both during his absence and after his return.

## California Academy of Natural Sciences.

### REGULAR MEETING.

SAN FRANCISCO, Feb. 4, 1867.

President in the Chair. Twenty-seven members present.

Messrs. C. Von Liehenau, L. Gilson, Delos J. Howe, R. S. Williamson, R. d'Hercuse, Rev. J. F. Harrington, H. C. Hyde, G. B. Hitchcock, Jacob Bacon, J. P. LeCount, Amory F. Bell, W. C. Walker, Dr. George H. Powers, and Dr. Thomas Beunett, were elected resident members.

Seventeen propositions for resident membership.

Professor Whitney read an interesting paper upon "The Fresh-water Infusorial Deposits of the Pacific States, and their relations to the Volcanic Masses." One object of this communication was to give an idea of the extent and distribution of the rocks which are made up, to a large extent, of the *Diatomaceae*, or those minute organisms of which a hundred million go to weigh a single grain. These rocks occur over a vast extent of country, from Santa Barbara north to the Columbia river. Those made up of fresh water organisms are limited to the Sierra Nevada and the region east and north, the most extensive deposits being on the east side of the range. The marine beds, on the other hand, occur in the coast ranges, and form a large part of the rocks, which are the principal repository of the bituminous substances occurring in this State. These rocks are of Miocene age, while the fresh-water deposits are Pliocene and Post-Pliocene. The principal object of this paper was, however, to set forth the connection of the fresh-water infusorial beds with the volcanic masses of the Sierra and to show that Ehrenberg's idea, that the infusoria came from great depths, and were really of an eruptive origin, were not supported by the facts. Reasons were given why these microscopical organisms were propagated with such rapidity and over so great an area in the volcanic region of the Pacific coast, and it was shown how such deposits were preserved from subsequent denudation by the capping of indestructible basaltic lava, which was afterwards poured over them. It was, in the opinion of the author of this paper, not difficult to explain all the phenomena of the occurrence of these infusorial beds in connection with volcanic masses, without adopting any theory of a deep-seated origin for the former, or an extremely superficial one for the latter. In conclusion, the author expressed his intention, at some future time, of bringing up the subject of the marine infusorial deposits, and remarked that he expected to be able to show that the bituminous substances found in the State were derived principally from infusoria.

**AMERICAN PICTURE FRAMES.**—A New York agent of a picture-frame manufacturing House in Hamburg, Germany, and himself a German, recently became so impressed with the superiority of the style of the American moldings, over those of his own countrymen, that he sent out a lot of American patterns, with the suggestion that they should be imitated by the Hamburg house. The House there was so well pleased with the styles that they did not hesitate to comply with the request, and the New York market is now supplied with American styles of moldings, made in Germany. A recent arrival in this city from Hamburg brought a lot of the same style of picture frames for the San Francisco market. This speaks well for American taste, but ill for American mechanism; inasmuch as our mechanics should not allow foreign manufacturers to underbid us in our own market, especially when those foreigners have to borrow the ideas of our designers for their work.

O. J. HOLLISTER's work, entitled "Mines and Mining in Colorado," will be published in New York about March 1st.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

(Written for the Mining and Scientific Press.)

## Plumbago--Graphite--Black Lead.

BY DR. L. LANSZWEERT.

(Continued from Page 66.)

## TRANSFORMATION OF AMORPHOUS CHARCOAL INTO GRAPHITE.

The crude metal of liquid cast iron which runs from the smelting furnace, is merely a solution of amorphous carbon, mixed with the mineral matter and impurities from the ore, also in solution, produced by the combustibles employed in the furnace. The ingots or pigs obtained from the cooling of the molten iron contain, as one twenty-fifth part of their weight, *scaly graphite*, identical with native graphite, and which can be easily separated from its metallic envelope.

To isolate the graphite from the iron; re-melt the latter, which, when liquid, runs, leaving infusible crystals of graphite; or, dissolve the cast iron in acid, and the graphite not acted on will be found as an insoluble residue.

## ARTIFICIAL PRODUCTION OF THE DIAMOND—ITS POSSIBILITY AND PROBABILITY.

The facility with which graphite is produced artificially, by the solution of ordinary coal into cast iron, leads to the supposition—a priori, of the possibility of a further step in the same direction; with the probability of the chemist being able, at some future time, to crystallize carbon into a still more dense and perfect form—even into a diamond more perfect than that gem is found in its rough state, in nature. Although the numerous efforts made in that direction have not yet been crowned with success, still there exists no reason, either physical or chemical, which is opposed to the possibility of a final result, as above, to such experiments. On the contrary, the artificial production of the diamond, either through crystallization of carbon from a solution, or by its elimination, from convenient condition, from some of its gaseous combinations, liquid or solid, would be in perfect harmony with the progress of modern discoveries.

## THE ARTIFICIAL PRODUCTION OF CERTAIN PRECIOUS STONES.

Within a few years, we owe to Ebelman the discovery of a method for the artificial preparation of corundum and white sapphire, obtained by the crystallization of alumina dissolved in fused borax. This solution has only to be concentrated by evaporation or slow volatilization of the borax, exposed to a very high temperature, in a porcelain furnace. Rubies, and other precious colored stones or gems, having alumina for their base, can also be obtained in the same way, with the slight modification of adding small quantities of colored metallic oxides to the solution of alumina in the fused borax. Although the gems thus artificially prepared have, till now, only been obtained of small size, such as those used as pivots for watch movements, etc.; still the laws of crystallization allow us to affirm, beyond possibility of intelligent contradiction, that in operating on larger masses, and taking more time, *proportionately larger crystals would be obtained.*

However marvellous may be the idea of transforming coal or graphite into diamond, that circumstance should interpose no check to our efforts in that direction. The idea is a very different one from that of the transmutation of metals, which, whatever may yet be discovered, has, as yet, no foundation in science.

Even among the chemical discoveries of the last decade, there are those which may be pointed out as almost, if not quite as extraordinary, as would be the conversion of carbon from some of its more ordinary forms into the hard and brilliant diamond.

## RECENT RESEARCHES ON GRAPHITE.

Leaving out of the question the interesting and seductive hopes growing out of the well known chemical relations between graphite and the diamond, the former substance,

of itself, is so valuable in the arts, so scarce in nature, and so full of interest to the scientific and practical chemist, that it has a right to a large share of our attention; and we propose to consider it at considerable length, with the view of its utilization among the growing industries of the Pacific Coast. Especially is this important at this time, when we are finding it in California in a profusion no where else met with, and at points of convenient access.

It will be interesting in this connection to note that at the First International Exhibition at London, in 1851, the committee to whom was referred that particular branch of manufacture, reported a most important improvement in the manufacture of graphite, introduced by Mr. Brockerson. That gentleman, aware of the fact that the graphite of Great Britain was rapidly becoming exhausted, and that it was already difficult and costly to procure masses of this mineral, of sufficient purity and dimensions to admit of its being cut up into the lengths proper for being manufactured into lead pencils, set himself to the task of devising some method by which he could render serviceable for such purpose the smaller fragments which could still be obtained of sufficient purity, but lacking only the size requisite for such manufacture. He finally succeeded in devising a method for compressing pulverized graphite into blocks, as homogeneous, coherent, and dense as the natural blocks. By this method a new value was obtained for a hitherto comparatively worthless material. At the last London Exhibition the highest honorable distinction was awarded to Mr. B. C. Brodie, for his new and successful improvement in the application of graphite.

A rapid *expose* of the various scientific researches into the character and application of graphite, will enable the reader all the better to appreciate the value of their industrial results. In the following observations it should be borne in mind that the results detailed depend in a great measure upon the *allotropy* of the material—i. e., the faculty possessed by certain substances to acquire properties entirely different from those they present under ordinary conditions, without addition or loss of weight—the change being brought about by an internal modification of their molecules, the nature of which is quite unknown.

One of the most familiar and best characterized examples of this kind of change is found in the red or amorphous phosphorus, with which all are familiar, as the red colored preparation seen on the tips of certain kinds of matches, or on the prepared surface, by friction on which alone, certain matches can be made to light. This kind of phosphorus is prepared from the common article, by simply submitting it to the prolonged action of considerable heat. Almost every one is acquainted with the peculiar properties of common phosphorus—its transparency, white-yellow appearance, its ductility, excessive inflammability, ready solubility, and its poisonous quality. Why, when this substance is changed (without addition to it or extraction from it of the slightest particle of its composition) to an amorphous or allotropic phosphorus, it should become opaque, of a dark-red chocolate color, not ductile, but hard and brittle, inflammable only at a high temperature, absolutely insoluble, and non-poisonous, is one of the questions that has not yet been answered. The change is certainly not less marvellous than would be the conversion of carbon from any of its ordinary forms to that of the diamond, and which is still nothing but carbon metamorphosed.

In the dreams of the transmutation of metals indulged in by old alchemists, there is certainly nothing which was essentially less probable or less possible to human understanding than the phenomena of allotropism, which are universally known and acknowledged by every chemist. The facts of allotropism could very well and with good reason be described as facts of transmutation—the name only would be changed; the results would be no more remarkable. The phenomena of the admitted occurrence are involved in a mystery as deep and incomprehensible as any thing absolutely unknown well can be.

## GRAPHON OR GRAPHITUM.

For a long time chemists have admitted that the three substances—charcoal, graphite, and diamond—were merely allotropic modifications of one and the same material, to which has been given the generic name of *carbon*. Mr. Brodie has demonstrated that the allotropism of those substances is characterized by difference of properties more marked than even those which distinguish the two allotropic states of phosphorus; in fact, that whether the one or the other form of phosphorus be submitted to the action of a given chemical agent, the final result will be the same. Thus, amorphous phosphorus,

as well as crystallized phosphorus, oxidized by nitric acid, produces in either case phosphoric acid; and chloride of phosphorus is also obtained, no matter which kind of phosphorus is submitted to the action of chlorine.

Graphite differs so much from amorphous or ordinary coal, that it appears, as it were, a distinct element, producing compounds entirely different; and possessing even another equivalent. It has been shown by the experiment of Mr. Brodie, on graphite, that this substance presents special characteristics so transient, and chemical analogies so marked and apparent, that, with reason, it can be classed under the distinct name of *graphon* or *graphitum*, next to the elements of silicon, boron and zircon.

It is impossible to give, within the brief space allotted to these papers, anything like a description, in detail, of Mr. Brodie's scientific researches in this direction. The following, however, will suffice to demonstrate the notable differences of chemical characteristics which distinguish carbon in ordinary coal from carbon in its allotropic condition of graphite.

When ordinary coal (lamp-black, or coal from calcined sugar) is heated in a covered vessel, with an ordinary mixture composed of one part of nitric acid and four parts of sulphuric acid, it oxidizes rapidly, producing a black substance, soluble in the mixture and strongly acid, but precipitated from it by the addition of water. This precipitate, when washed and dried, is insoluble in acid or saline solutions, but soluble in pure water or alkaline solutions.

Treating in the same way graphite (especially the *scaly* variety), it takes on a beautiful violet tint, and crumbles in the acid liquid. This product, washed with water, presents again the aspect of graphite, but of a deeper color, and is insoluble in all the reagents. By analysis we find it to contain not only carbon, but oxygen, the elements or constituents of water—and those of sulphuric acid. Even in boiling this compound in a concentrated solution of caustic potash or soda, sulphuric acid is not taken from it, neither does it show any sensible loss.

Amongst the most remarkable characteristics of this curious product, may be mentioned the fact that, when submitted to the action of a red heat, it swells rapidly, evolves gases, and reduces itself to a powder of extreme fineness, which is nothing more nor less than graphite in a perfect state of molecular disintegration!

[To be Continued.]

(Written for the Mining and Scientific Press.)

## Mining in and about Nevada.

NEVADA CITY, Cal., Jan. 27.

EDITORS PRESS:—Notwithstanding the tornado that has recently swept through this vicinity, and the unprecedented fall of rain and snow, we still survive. Nearly all companies prospecting for quartz or cement, unless with machinery, have been compelled to suspend operations. Judging from appearances, the yield of gold has been less for the three months past than the general average. This falling off, however, is only temporary, and the causes producing it will, before the season is over, prove beneficial. The county has increased largely in population and wealth within a year; but I am frank to say that the addition of the latter has not been equal to the former. In a county as easily accessible as this, population is attracted sooner than capital. Nevada (State), Montana and Idaho, have contributed to swell our numbers, but not our taxable property. Grass Valley has added fifty per cent. to its population within a year, and has grown much more rapidly than Nevada or any other town in the county, and is probably the third place in the State in size, and if its mines could be taxed for what they are worth, its real estate and personal property combined, would cause its assessment roll to rank next to that of San Francisco. Sacramento and San Jose may demur to this last statement, but it is true, nevertheless. From consultation with bankers, express companies, and all the best sources of information, the gold yield for the year 1866 in Nevada county was not far from ten millions of dollars, or fully one-third of the entire yield of the State for the same period. I am not aware that there is a single county in the United States whose yearly report of agricultural products equal in value the amount of bullion sent from this county,

and yet there are counties whose assessment value would be vastly greater.

The snow, on the 20th of January, was sixteen inches deep in this city, and the sleighing, for a day or two, comparatively good. I have but few mining statistics to offer you from this locality, from the fact that but few quartz companies are taking out rock, most of them having been engaged in sinking for new levels, prospecting, or repairing machinery for more vigorous operations when the weather shall be less unpropitious. The Nevada Mill and Mining company, two miles below the city, on Deer Creek, took out and crushed during the past year 5,250 tons of rock, yielding \$42,000, or eight dollars per ton. Their ledge is from five to fifteen feet thick, and the quartz is all taken out by means of tunnels run into the hillside above the water level. Although the ore is of a low grade, yet the mine has been worked more steadily, and has turned out more gold than any other in Nevada township.

A mine owned by Thomas Findley and others of Grass Valley, immediately below the Nevada company, on the bed of Deer Creek, was opened last summer and fell to the depth of sixty feet, where the ledge is fifteen inches wide. Some ten thousand dollars was taken out in a short time, the rock averaging over sixty dollars per ton. When the rains came, work was suspended for want of hoisting machinery. The company intend erecting hoisting works and mill in the spring.

The California mine, owned by Pattee, Ferre and others, has been opened to a depth of 240 feet by the incline, which is twelve feet wide, and substantially timbered. Perpendicular depth reached 140 feet; depth of the new level below the old one sixty-five feet.

The Banner mine is turning out a large amount of rock, which is said to pay well. Its owners being exceedingly reticent, no particulars as to the number of tons of rock crushed, or its average yield can be made public. The fact, however, that they intend to erect a 20-stamp mill in the spring, in addition to the 10-stamp mill they already have in operation, is pretty good evidence of the productiveness of their mine. The Union mine, near the Banner, has been closed on account of the influx of water caused by the late storm. More powerful hoisting machinery will have to be procured before the mine can be successfully worked.

The incline in the old Whigham mine is now down 250 feet. They have out 200 tons of ore, which will probably yield sixty dollars per ton. The owners of this mine have recently purchased machinery in San Francisco for a 10-stamp mill, which will be erected as soon as the weather and roads will permit. The Whigham and Banner are considered the best developed and most reliable mines in Nevada township.

The Willow Valley mine, owned by Marcellus, Eddy, Welch and others, has been idle for about two months. Some repairs are being made to the machinery for the hoisting works, and work will be resumed early in the spring. The Pennsylvania mill and mine are being actively worked. The incline is now down about 200 feet, at which depth good rock is being taken out. No discoveries of quartz of any importance have been made about Nevada for months past, and but little prospecting has been done except by machinery.

Black & Co's quartz mill, near Eureka, which was completed last October, and has ten stamps, has crushed 200 tons of rock since its erection, which yielded about \$3,000, or fifteen dollars per ton. The company are waiting for fair weather, so that they can introduce pans for grinding the pulp when they crush more rock. Their ledge is from two to four feet wide, and they have some two hundred tons of ore out near their mill.

The 15-stamp cement mill near this city, owned by Marcellus & Co., suspended operations recently for want of timber for their mine. As soon as the roads are settled so as to be passable, work will be resumed in the mine, or rather the old river channel, and the mill will be kept busy. Some seventy-five tons of cement or gravel is crushed daily at this mill when it is in operation.

At Meadow Lake the people are struggling under ten feet of snow, and with the exception of the General Grant and one or two other mines, but little progress will be made before next summer.

To sum up all, the extraordinary fall of snow and rain has been a temporary detriment, on the whole, to all branches of mining, but a few weeks of fair weather will place things generally in better working order than before, and next summer will be apt to see the mining industry of the county more prosperous than ever. GREGGIAN.



## Mechanical.

## Improvement in Iron Manufacture.

A matter which we have often wondered has never been attempted, is now announced as having been successfully accomplished in Austria, and repeated by Mr. Jonas Heuderson, of Brooklyn, N. Y. It is well known that much difficulty is encountered, from various causes, in the process of mixing the metals, manganese, Franklinite and titanium with iron, as is now done to some little extent, in order to improve the quality of the latter metal, to render it hard, more steel-like, etc. It is also found difficult to fuse these ores in the presence of iron ore, as the titanium, etc., has been found to refuse to mix with the iron, preferring to form a silicate, and go off with the slug.

The Austrian process has obviated this difficulty, by charging a properly constructed blast furnace with a mixture of iron and manganese ores, or indeed, any of the magniferous iron ores, or ores of Franklinite or titanium, so that there is formed on the hearth of the furnace a molten mass of metal, alloyed with metallic manganese, Franklinite or titanium, in such quantities that it may be run directly into a Bessemer converter and subjected to the usual process of decarbonization, with this advantage over the ordinary method, that the manganese, etc., is thoroughly incorporated, and exerts its beneficial influence from the very beginning, instead of being introduced near the end of the pneumatic process or by an entire afterapplication. By this mode, it is claimed that Bessemer steel, improved by the above alloys, can be furnished much cheaper than by the other method, and finished bars, rails, plates, etc. can be produced by the same heat that melts the ores into crude or east iron. The plan is said to be in successful operation in Austria, and will soon be introduced into this country.

If the above statement is correct, a most desirable object has been gained in the manufacture of iron. The cost of obtaining the above alloys, has been an impassable barrier against their general introduction. We have, from time to time, for the past two years, made frequent allusion to the desirability of such an object, showing the vastly increased superiority of iron or steel alloyed with even as low as one or two per cent. of these alloys. Our readers will doubtless well recollect the experiments lately made in England with the titanic iron sands from New Zealand. A similar effort was made about a year ago to produce titanic iron from a similar sand, which is found in considerable abundance in the ocean, west of Lone Mountain. We shall look with considerable interest for a corroboration of the above statement, or for any further developments in that direction.

**BRONZE SHEATHING METAL.**—The yellow sheathing metal, which is so extensively used for coppering vessels, is finished by immersing the sheets, after all rolling is done, in an acid bath. This gives a fine color; but it is now asserted that it is injurious to the metal. The hard and polished surface is removed, and in its place is left a rough and uneven surface, which is, moreover, considerably softer than the other. A microscope makes the first plainly perceptible, and the last is shown by the ease with which it is scratched with a knife. It is believed by some that more injury is done to the metal by the ten minutes immersion in the acid, than would result from six months use in water. The New Bedford Copper Company have secured a patent for their "bronze sheathing" metal, the composition of which is the same with that of the "yellow metal," the sole difference being in the finish of the surface.

CAST IRON is doubly more expansive than wrought iron, and wrought iron doubly more so than steel.

**ROLLING MILLS.**—Prior to 1817, there was not a rolling mill in the United States for bar iron. All the bar iron, not imported, was made by the expensive and tedious process of the forgo hammer. The first rolling mill put up in the United States, was erected in 1816, by T. C. Lewis, for Isaac Mason, Sen., near Connellsville, Penn. It commenced operations in October, 1817. One of the persons who assisted in rolling the first bar of iron at that mill, and the only one of the number now living, recently communicated these facts to the *Pittsburg Commercial*. The first rolling mill at Pittsburg went into operation in 1819; now there are upwards of fifty in that city and vicinity alone.

Judging from the wonderful progress and extent which has been witnessed in the iron interest of this country during the past twenty-five years, and viewed in connection with our resources in that direction, it is difficult to conceive where it will stop or retrograde in its present rate of increase. The iron and coal resources of this country are without parallel in the world, and cannot fail to place the American people at the head of the industrial nations of the earth.

It is well known to our citizens that arrangements are being made to establish a rolling mill on the Potrero, near this city. We understand that a train of rolls, with heavy shears, etc., required for the manufacture of all sizes of iron, also several turning lathes to enable them to do their own machine work, are now on their way thither from the East. Drawings are being prepared for the engines, which will be built in this city. The Pacific Forge Company, near the railroad repair shop, has been consolidated with, and is now operating as a part of the rolling mill establishment. The works, when in full operation, will be fully equal to the necessities of the Pacific coast. We also understand that the company proposes to experiment with California iron ores, with the view of learning the practicability of furnishing our own raw material. Should they succeed in this particular, it will open up a new and important industry on this coast.

**PEAT IRON.**—The *Montreal Gazette* notices the first bloom made in that part of the world with pure peat fuel, and pronounces it of the very highest quality, equal to the best Swedish iron. The bar was bent cold by a vice, and doubled up close at right angles with an edge, without a crack or flaw appearing, the outer corners remaining smooth and sharp; a test which it is said no coal-iron made in Canada will stand. The fact is of great importance to all those countries where coal is scarce; but peat and iron abundant. The peat resources of California are almost unlimited, and the question of their utilization and ultimate value is merely a question of time.

**STEEL RAILS FOR AMERICAN RAILROADS.** Charles Cammell & Co., of Sheffield, Eng., have recently received orders for 28,000 tons of Bessemer steel rails—a large portion of which is for the Erie, New York Central, Boston and Worcester and Boston and Providence railroads. Experience is fast proving the economy of this description over the ordinary iron rail, especially on curves, turn-outs and near depots and other stations where more than ordinary friction comes upon the rails in consequence of frequent stoppages.

**IMPROVEMENT IN IRON PLATING.**—According to the *Engineer*, an internal coating of a mixture of powdered cork and india-rubber has been found such a protection to the plates of iron vessels that when an eight-inch shot was fired through a thickness of one foot of this substance, it closed so tightly that the end of a walking-stick could not be forced into the hole.

**OIL IN CANADA.**—A flowing oil well was recently struck in Enniskillen township, Canada West, the capacity of which is over 600 barrels per day.

## Scientific Miscellany.

## Singular Facts with Regard to Heat.

It is a singular scientific fact, that ice at 32° cannot communicate caloric, by direct contact, to water cooled, as, under certain circumstances, it may be, to a temperature below the freezing point; and that water, under atmospheric pressure, heated, as may be done, to a point above steam heat, cannot communicate caloric to steam which passes through it, at the normal steam heat of 212°.

In the former case, the contact of ice with over cooled water, causes an instantaneous congelation of a part of the water, with a rise in temperature of the balance to 32°; in the latter case, the contact of steam with over heated water causes a sudden ebullition of the water, with a conversion of a portion of the same into steam at 212°, while the balance instantaneously falls back to the same temperature of 212°.

To obtain steam from a saturated solution of common salt and water, the water must be heated, under atmospheric pressure, to 226°; yet the steam which comes off is only 212°. So, also, of other solutions which boil at various degrees of heat above 212°—some of which (as a solution of potash or muriate of lime) require a temperature of 272°, yet emit steam in all cases, under atmospheric pressure, at 212°; except where the substance of the material dissolved, itself enters into the composition of the vapor. In that case, the vapor may pass off at a temperature very nearly or quite equal to that of the boiling mass.

The cause of the first class of phenomena noted, has been referred to molecular conditions and polar influences in the ultimate particles of matter. This explanation, or rather hypothesis, for want of a better, has been generally accepted by modern investigators.

It is easy to conceive, as remarked by a writer in the *Philosophical Magazine*, that the "affinity or attractive influence between the particles of water and those of a dissolved body, should hold down the water particles in close association with the solid particles against the force of heat tending to separate them, and that thus the boiling point of the solution should be raised; but it is not so easy to conceive why the steam-bubbles rising from the bottom of a solution of potash, boiling at 272°, should escape from the surface as saturated steam at 212°, without any indication of having been superheated by contact with the liquid sixty degrees hotter, and through which (it may be for a long distance) it has passed! This latter phenomenon, especially, seems to be completely enveloped in obscurity, and must be classed among the many mysteries of science, the solution of which is still to be sought for.

**TIMBER LAND.**—The best proportion of timber land required for an agricultural country, to secure a regular and sufficient rain-fall without violent storms, is an interesting subject of scientific inquiry. Inestimable benefit would result to the mineral interests of this country, if the proportion could be ascertained and in some way secured by legislation, in each of our several descriptions of territory. The quality, pitch and elevation of the land, with the influence of mountains and seas, as well as climate, are among the conditions to be taken into account. Rentzsch calculates twenty to twenty-three per cent. of forest as necessary in Germany; while five per cent. would suffice for England, and Sir Henry James considers half that portion sufficient.

**MANGANESE.**—One of the richest and perhaps the softest species of black oxide of manganese ore ever found, was discovered in Arkansas, just before the war, by an English proprietor of manganese mines in Germany. This gentleman was induced by a statement of the late geological surveyor of Arkansas to come over and search for a conjectured deposit near Polk's Bayou. It was found in the mountains to the left of Law's Creek, which empties into Polk's Bayou, about two miles from Batesville, and is pronounced by the discoverer superior to any that he had ever worked. There is much of the harder species in Independence county, especially on Lafaty Creek.

**DUE PROPORTION OF CARBON IN ILLUMINATING GAS.**—It is well known that the variable amount of light obtained from illuminating gas is mainly due to the presence of more or less carbon. A French commission was appointed in 1852 to instigate a series of scientific experiments, to ascertain the exact proportion of carbon required in ordinary illuminating gas, to produce the greatest amount of light. Their report was that 27 per cent. of carbon should be present to produce such a result. Gas, deficient in carbon, may have that deficiency, to a certain extent, made up by passing it over or through any of the light hydrocarbons—such as naphtha, etc. More or less carbon will thus be added, according to the volatility or temperature of such hydrocarbons. Various kinds of apparatus have been devised for accomplishing this purpose, which may be set up by the purchaser independent of the company's gas-meter. An important economy in the use of gas is claimed in the employment of some of these machines. A gas, deficient in carbon, is more profitable for the gas manufacturer, who sells by measure, at the expense of quality. Atmospheric air may be admitted into the mains and sold with the gas. Ten per cent. of air may thus be admitted and sold, which mixture will give just as good a light as though the gas was pure; but the register will indicate a corresponding increase in the consumption. It is supposed that this thing has happened in the case of unscrupulous gas companies who have been compelled to decrease their price of gas—they add a per centage of air to the gas, just in proportion to the per centage of reduction in price; thereby actually selling their gas at just the same price which they obtained before the decrease.

**ELECTRICITY FROM A CANDLE.**—Professor Faraday has demonstrated that the electricity evolved from the combustion of a common candle, would, if arranged in a continuous circuit, exceed that of the most powerful battery. The theory is that the heat generated by combustion, is owing to the union of the two electricities—the primitive and negative. If a means could be discovered by which this source of power could be taken off, as from an ordinary galvanic battery, a new career would be thereby opened to science and to mechanics. The same is true of any species of combustion. The coal consumed under a steam boiler produces an amount of electricity, which, if it could be utilized, as from the decomposing action of a battery, and converted into magneto-electricity, would be sufficient to propel a whole fleet, instead of a single boat. This little demonstration of Faraday's opens to our vision a most astonishing field for contemplation and research. Verily, the world moves!

**HEAT OF THE SUN.**—Nearly a century ago, the French naturalist Buffon, and more recently Bischof, made a series of experiments with cast iron balls of varying sizes, and heated to a white heat, seeking to establish some law of relation between size and the time requisite to cool through a certain number of degrees. From the results of these experiments, the conclusion is deduced that millions of years would be required to cool to any perceptible degree a body as large as our sun, if once in a white hot state. As proof of the intense heat of the sun, the spectroscopic shows that substances solid on our earth, such as zinc, sodium, potassium, nickel, copper, and even iron, exist on the surface of the sun, only in the state of vapor.

**TELEGRAMS TO THE SUN.**—The waves of sound go only 377 yards in the second, while the earth itself goes 18½ miles, and light 10,000 times faster than that; while electricity (which is vibration of the solid atoms of bodies, and not a fluid,) runs along the wire about half as fast again as light. So, if the earth were a cannon ball, shot at the sun from its present distance, with the velocity it now travels with, and the moment of explosion telegraphed to the sun, they would get the telegram there in about five minutes, and see the earth coming in about eight minutes, and would have nearly two months to prepare for the blow, which they would receive about fifteen years before they heard the original explosion. This is merely taking the sun as a target to be shot at without regard to his power of attracting the earth at the final of 390 miles a second.



## New Patents and Inventions.

Under this heading we shall mention, from week to week, as occasion may demand, New and important inventions; also, the list of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**SHINGLE MACHINE.**—J. P. N. Davis, of Point Arenas, Cal., has recently invented a shingle machine, for sawing, shaving and piling, for which he claims several important advantages, as follows: It is so light as to be easily carried about by four persons, thereby obviating the necessity of hauling to any given locality a large amount of timber which cannot be worked into shingles; it requires but five men to run a machine, which will turn out 30,000 shingles in ten hours; and it is so constructed that it can be easily set to meet different sized bolts. It is said to make an excellent shaved shingle. Application for a patent for the same has been made through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

**SASH MORTISING MACHINE.**—Mr. G. Kindelberger, of this city, has invented a machine for mortising sashes, which is claimed to be an improvement on the old sash mortising machine. It consists of an iron slide to run upon the bed, as in the old machine, with a regulating, movable pin and lever. By this invention it is claimed that sashes can be mortised without first being marked off; and that an experienced workman can take the sawed strips for sashes and mortise them without any difficulty, while the work can be performed with greater celerity and exactness than it could under the old plan by skilled workmen, even after the sash pieces have been marked off with a square and rule.

**A NEW CONCENTRATOR.**—The Nevada Gazette speaks of a new concentrator recently invented by Justin Mitchell, of that city, which is now being experimented with at the mill of the New York company. The Gazette is informed that the machine is very simple in its construction, that it costs but a trifle, and of the rock on which the experiments were tried it saves about one-fifth the pulp, including all the sulphurets and the heavier portions of the rock which contain the gold. The concentrated tailings are then worked in Mitchell's pans.

## PATENTS RECENTLY ISSUED.

**COMPOSITION FOR PREPARING AND HARDENING WOOD AND PRESERVING THE SAME.** John L. Samuels, San Francisco, Cal.: Mr. S. claims the use of a composition of sulphate of iron, common lime, and water, mixed in certain proportions, for the purpose of being injected into wood and timber, to render the same impervious to the influence of wet and dry rot, and the attacks of worms and insects.

**A GOLD DREDGING AND CONCENTRATING MACHINE.**—John Johnson, of Saco, Maine, has obtained a patent for a "Process of obtaining the precious metals from the beds of rivers," and another for a new "Mode for gathering and treating auriferous sands from the beds of rivers." The former, as described, is substantially that elsewhere noticed, at length, in the present issue, under the head of "A Gold Dredging machine." The latter is a combination with the dredging or pumping apparatus of a certain combination of "separators, concentrators, agitators and amalgamators," to be operated on a barge or elsewhere.

**CYLINDRICAL AMALGAMATOR.**—Thos. M. Fell, New York city, claims the introduction of the alternating sluice or flood motion for obtaining entire suspension and trituration of the mass, accomplished by what we designate a dash or sluice board acting in connection with a vibrating or oscillating cylinder, substantially as set forth, for the purpose of amalgamation of gold and silver ores. Also, the introduction, for the purpose of amalgamation, of an oscillating or vibrating cylinder to which is attached a dash or sluice-board, all substantially in the manner described.

**TEMPERING STEEL SPRINGS.**—Cephas Manning, West Albany, N. Y., claims the use of a combination of linseed oil (raw or boiled) with as much common salt as the oil will take up, for the tempering of steel springs, in the manner described.

**QUARTZ MILL.**—Gilbert D. Jones, New York city, claims adjustable or rising and falling scrapers, and fixed scoopers, arranged and applied to operate substantially in the manner and for the purposes set forth in his specifications on file.

**MOSAIC.**—There are eighty-seven thousand seven hundred and seventy-two pieces of wood in the floor of the new dining room at the Lick House, in this city.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
FEBRUARY 9, 1867.  
MONEY MARKET.

A very marked ease is apparent in the money market, and all demands for business accommodations are freely met by our banking institutions at rates which have ruled for some time past— $1\frac{1}{4}$  @  $\frac{3}{4}$  cent. per month for first class paper, while outside transactions command  $1\frac{1}{2}$  @  $\frac{3}{4}$  cent. in most instances. At present the deposits in our private banks and savings institutions are very large, having been greatly augmented within the past few months. This has been more especially the case since the commencement of the present year, and may be rather more applicable to the increase of deposit receipts by the savings societies than to our other monetary institutions.

The Legal Tender market has been very quiet during the period under review, and sales were mostly effected within a range of  $73\frac{1}{4}$  @  $74\frac{1}{4}$ . In the Board  $30,000$  in Legal Tenders sold at  $73\frac{1}{4}$  @  $73\frac{1}{2}$ , seller 30, and a small amount at  $73\frac{1}{2}$ ; also  $2,000$  in June 7-30's at  $78\frac{1}{2}$  c.

The aggregate sales in the Stock and Exchange Board of Stocks, Bonds and Legal Tender Notes, during the month of January, 1867, amounted to  $\$3,664,322$ ; in January, 1866,  $\$2,727,187$ ; in January, 1865,  $\$1,901,598$ ; and in January, 1864,  $\$3,484,285$ .

The duties paid at the Custom House in this city, from January 1 to February 7, 1867, inclusive, amounted to  $\$613,641.63$ .

## CITY STOCKS.

This class of securities continue quiet so far as public transactions are concerned. During the present week sales in the Board of California Steam Navigation Company were made at  $60\frac{1}{2}$  @  $60\frac{3}{4}$  cent., and National Insurance Company shares at  $74\frac{1}{2}$  @  $73$ , ex-dividend.

## MINING SHARE MARKET.

Since our last reference the stock market has been exceedingly variable, but most leading shares at the close show more strength at enhanced figures. The improved condition of the roads in the State of Nevada, incident to a change in the weather, will, it is thought, remove the recent difficulty experienced in hauling ores to the different mills. So far as late developments are concerned, we hear of nothing specially unfavorable, and much that is of an encouraging nature. Several companies have already announced their dividends for the present month.

**HALE & NORCROSS**—continues to be well held in the hands of a few parties, and rarely makes its appearance in the market. It is nominally quoted at  $\$2,600$  asked.

**SAVAGE**—is in better favor at the close, having declined from  $\$1,960$  to  $\$1,900$ , then steadily advanced to  $\$2,125$ , and closed at  $\$1,915$ , ex-dividend. This company disbursed a dividend of  $\$100$  per foot to its stockholders yesterday, and will carry forward a cash surplus of about  $\$75,000$ . During the week ending February 2d, 1,395 tons of ore were extracted from the mine, showing an assay value of  $\$39.40$  per ton—an improvement of more than  $\$4$  per ton over the assay value of the amount extracted during the previous week. Recent developments in this mine, at a depth of 100 feet in winze No. 2 from the seventh station, prove the continuance of ore to that depth. The cross-cut at that point, it is said, shows eleven feet of fair average ore, and the returns for the present week exhibit a marked improvement in the ore taken from the south mine. The Curtis shaft is now about 50 feet below the seventh station.

**CROWN POINT**—was very irregular during the period under review, opening at  $\$1,075$  advancing to  $\$1,100$ , seller 30, then receding to  $\$1,025$  and  $\$905$ , rallying to  $\$1,000$ , and closing yesterday at  $\$975$ . No material change in the mine. The shaft from the 400-foot level has now attained a depth of 60 feet. During the week ending February

1st, 912 tons of ore were extracted, showing an increase of 158 tons as against the amount raised during the previous week. The bullion returns for the month of January amounted to about  $\$140,000$ , leaving a balance of  $\$110,000$  after paying all expenses.

**YELLOW JACKET**—was largely dealt in during the past week, and at very changeable prices, advancing from  $\$725$  to  $\$900$ , rapidly declining to  $\$715$ , then rising to  $\$770$  @  $795$ , and at the close selling at  $\$800$ . There is said to be some improvement to note in the condition of the south mine; the north mine looks less promising.

**GOULD & CURRY**—has met with more inquiry, declining from  $\$512.50$  to  $\$505$ , improving to  $\$520$  and  $\$580$ , and at the close obtained  $\$560$ . We are informed that this mine looks well, without any change worthy of special mention. The mill is in good running condition.

**CHOLLAR-POTOSI**—shows an improvement from opening prices, advancing from  $\$224$  to  $\$235$ , and closing yesterday at  $\$235$ . The bullion received by this company from crushings during the month of January amounted to about  $\$80,000$ . The breasting recently done 110 feet below the Blue Wing station has developed a large body of ore, which is estimated by the company's surveyor at 20,000 tons of  $\$30$  ore.

**EMPIRE MILL**—advanced from  $\$175$  to  $\$195$ , then sold at  $\$190$ , and at the close  $\$190$  is bid. This company disburses a dividend of  $\$15$  per share to-day; this sum added to the January dividend of  $\$10$ , shows a total distribution of  $\$30,000$  since the first of the present year. It is said that in the old "Red Ledge," on the 250-foot level, a body of ore supposed to contain about 15,000 tons is now in sight.

**IMPERIAL**—sold at enhanced rates during the present week, rising from  $\$164$  to  $\$175$ , and at the close  $\$175$  is asked. The bullion returns for the month of January have been largely in excess of several previous months, aggregating  $\$115,948.67$ , as against  $\$81,045.67$  in the month of December—an increase of  $\$34,903$ . The last clean-up in January produced more than  $\$55,000$  in bullion. This company has a large supply of ore at the Rock Point mill, and about 2,000 tons had accumulated at the dump on the first instant, at which time the hauling of ore was resumed. The Imperial-Empire shaft is now 775 feet in depth.

**OPHIR**—has been dull, a few feet selling at  $\$148$  @  $145$ , closing yesterday at  $\$145$ . The tenth level drift in this mine to the east is in about 40 feet. In the north mine, ninth level, an "upraise" shows, it is said, some favorable indications.

**CONFIDENCE**—declined from  $\$36$  to  $\$26.50$ , improved to  $\$30$ , and at the close sold at  $\$26.50$ . The bullion receipts in January amounted to  $\$22,494.21$ ; in December to  $\$25,978.12$ .

**BELCHER**—advanced from  $\$126$  to  $\$135$ , and closed at  $\$135$ , buyer 30.

**BULLION**—sold within a range of  $\$31$  @  $\$21.50$ , closing at  $\$22$ . ... **OVERMAN** at  $\$26.50$  @  $\$24$ . ... **DANEY** at  $\$4.50$  @  $5$ ; and a large amount of **SIERRA NEVADA** stock at a uniform price of  $\$4$ .

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to  $\$1,012,616$ .

**YELLOW JACKET DECISION.**—A Washington telegram, dated February 4th, says: "By the Supreme Court, to-day, in the Yellow Jacket Washoe mining case, the writ of error was dismissed for want of jurisdiction, which leaves the original judgment of the Supreme Court of Nevada undisturbed." This settles the title to 240 feet of mining ground, worth over  $\$200,000$ , claimed by the company, who hold under the first purchasers from the attorney-in-fact of the original owner of the ground.

**PROF. BLAKE'S** Lecture on Japan, before the Lincoln Lyceum at Oakland, on Thursday of last week, was listened to with great attention by a very large and appreciative audience.

## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

**TO COPPER SMELTERS.**—Any person desirous of securing the services of an experienced copper smelter, will do well to notice an advertisement in the present issue, headed "To Owners of Copper Mines and Smelting Works." The advertiser has had some twenty years experience in copper smelting establishments at the East.

**CALIFORNIA LEATHER AT THE EAST.**—The steamer of January 30th, hence for Panama, carried one hundred sides of sole leather from the tannery of Wagner Bros. of Stockton. The firm in Massachusetts to which it is consigned, say there is no better leather made in the United States.

**GASTON'S SCREW AMALGAMATORS.**—One of these pans was shipped, a few days since, for the Guadalupe and Sacramento Company, Mexico. Their works are about sixty miles east of Mazatlan.

**PACIFIC HYGIENIC HOME WATER CURE**, at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated), B. J. SMITH, M. D., Consulting Physician; R. S. MACRETH, M. D., Attending Physician; W. G. W. HARFORD, Manager; H. ANDREWS, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-tr

**OLNEY & Co.**, Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. no10

**NATURAL CURIOSITIES FOR CHRISTMAS.**—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shell and Wax Flowers, besides Feathers, Birds and Butterflies, larval plants, Shells, Sea-weeds, etc. 24v13-qr

**Air Pump for Sale.**—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN ROACH, mathematical instrument maker, 522 Montgomery street. 24v13-9p

## OUR NEW YORK AGENCY.

Mr. GEO. M. NEWTON is our authorized agent in New York City, and will receive advertisements and subscriptions for the MINING AND SCIENTIFIC PRESS at regular rates. Sample copies of our weekly and monthly issues can be procured by calling upon him, at the office of the "STOCKHOLDER," No. 72 William street.



### SALES OF THE WEEK

BY THE N. Y. STOCK & EXCHANGE BOARD

Monday, February 4.

24 sbs Ophrah at 148 per foot.  
24 sbs Ophrah at 150 per foot.  
12 sbs Gould & Curry at 505 per foot.  
12 sbs Gould & Curry at 510 per foot, b 10.  
1 sh Bachelor at 126 per foot.  
52 sbs Chollar Potosi at 270/277 per share  
3 sbs Chollar Potosi at 230 per foot at 30.  
10 sbs Chollar Potosi at 277 per share a 10.  
3 sbs Savage at 180 per foot.  
6 sbs Savage at 1605 per foot.  
3 sh Savage at 1970 per foot, a 30.  
1 sh Savage at 1405 per foot a 30.  
6 sbs Bullion at 31 per share b 6.  
1 sh Empire M & M Co. at 124 1/2 per share.  
1 sbs Overman at 25 per share, a 10.  
20 sbs Overman at 26 per share.  
5 sbs Imperial at 166 per share.  
6 sbs Imperial at 163 per share.  
3 sbs Crown Point at 1100 per foot, a 30.  
3 sbs Crown Point at 1100 per foot a 10.  
1 sh Yellow Jacket at 780 per foot b 10.  
3 sbs Yellow Jacket at 770 per foot.  
5 sbs Confidence at 33 per share.  
20 sbs Confidence at 34 per share, b 30.  
20 sbs Confidence at 32 1/2 per share, b 30.

AFTERNOON SESSION.  
 24 shs Ophir at 150 per foot.  
 12 shs Ophir at 149 per foot.  
 3 shs Confidence at 26½ @ 30 per share.  
 15 shs Confidence at 32½ @ 30 per share, b 30.  
 16 shs Confidence at 27½ per share.  
 2 shs Savage at 1925 per foot.  
 9 shs Chollar-Potosi at 225 per foot.  
 20 shs Chollar-Potosi at 221 per foot.  
 13 shs Chollar-Potosi at 221 per share.  
 1 sh Yellow Jacket at 810 per foot b 10.  
 4 shs Yellow Jacket at 810 @ 815 per ft.  
 10 shs Sierra Nevada at 4½ per share.  
 1 shs Overman at 25 per foot.  
 10 shs Overman at 24½ per share.  
 5 shs Imperial at 167½ per share.  
 5 shs Imperial at 172 per share.  
 5 shs Imperial at 170 per share, s 50.  
 25 shs National Ins. Co. at 74 per cent  
 5 shs Bullion at 30 per share.  
 20 shs Bullion at 31 @ 30 per share b 10.  
 Amount of sales.....\$188,67 50

**Tuesday, February 5,**

9 sh Empire M & M Co. at 187½ per sh.  
 9 shs Confidence at 29 per share.  
 10 shs Confidence at 28 per share.  
 10 shs Bullion at 25½ per share.  
 15 shs Bullion at 22¼ per share b 10.  
 2 shs Chollar-Potosi at 218 per foot.  
 2 shs Chollar-Potosi at 22½ per foot.  
 10 shs Chollar-Potosi at 220 per foot s 30.  
 2 shs Yellow Jacket at 850 per foot.  
 10 shs Yellow Jacket at 900 per foot.  
 12 shs Sierra Nevada at 4 per share.  
 1 shs Gould & Curry at 512½ to 515 per foot.  
 1 shs Imperial at 175 per share.  
 4 shs Savage at 1950 per foot, s 10.  
 4 shs Savage at 1955 per foot, s 10.  
 4 shs Savage at 1955 per foot.  
 3 shs Savage at 1960 per foot.  
 1 sh. Savage at 1975 per foot, b 10.  
 1 sh. Savage at 1950 per foot, a 50.  
 2 shs Overman at 24½ per share.  
 \$2,000 U.S. 7-30 Bonds June Issue at 75½.

ATTENTION SESSION.

120 shs Sierra Nevada at 4 per share.  
50 shs Confidence at 27 per share.  
15 shs Confidence at 19½ per share.  
40 shs Confidence at 50¢/31 per share b 30.  
40 shs Confidence at 57¢/20 per share, s 30.  
2 shs Empire M & M Co. at 19½ per sh.  
5 shs Empire M & M Co. at 197½ pr sh b½.  
5 shs Bullion at 23 per share b 15.  
21 shs Bullion at 21¢/25 per share.  
50 shs Yellow Jacket at 800/770 per ft.  
4 shs Yellow Jacket at 78½ per foot.  
5 shs Yellow Jacket at 800 per foot b 30.  
6 shs Yellow Jacket at 805 per foot, b 30.  
8 shs Gould & Curry at 510 per foot.  
4 shs Yellow Jacket at 520 per foot.  
10 shs Cal Sican Nav Co at 60 per et.  
20 shs Chollar-Potosi at 224 per foot.  
19 shs Chollar-Potosi at 225 per foot.  
10 shs Chollar-Potosi at 22½ per share.  
6 shs Chollar-Potosi at 225 per foot.  
5 shs Chollar-Potosi at 223 per et s 30.  
4 shs Crown Point at 1160 per foot b 30.  
4 shs Crown Point at 1125 per foot.  
10 shs Overman at 21½ per share.  
10 shs Overman at 24 per share, s 30.  
1 sh Savage at 1950 per foot 3 50.  
1 sh Savage at 1975 per foot.  
2 shs Belcher at 132½ per foot.

Amount of sales.....\$214,677 00

Wednesday February 6.

35 sbs Confidence at 30/29 1/2 per share.  
 5 sbs Confidence at 31 per share b 30.  
 100 sbs National Insurance at 73 per share.  
 62 sbs Chollar-Potosi at 228/239 per ft a 30.  
 25 sbs Chollar-Potosi at 240/235 per ft b 30.  
 8 sbs Crown Point at 960 per foot.  
 5 sbs Savage at 2000 per foot, 30 d.  
 4 sbs Savage at 2000 per foot.  
 4 sbs Savage at 2025 per foot.  
 1 sh Savage at 2050 per share, b 30.  
 103 sbs Ophir at 145 per foot.  
 2 sbs Belcher at 132 1/2 per share.  
 1 sh Belcher at 130 per foot.  
 8 sbs Gould & Curry at 550 per foot.  
 9 sbs Yellow Jacket at 725/775 per foot.  
 11 sbs Yellow Jacket at 770 per foot.  
 1 sb Yellow Jacket at 740 per foot a 30.  
 4 sbs Yellow Jacket at 745/765 per ft b 30.  
 1 sh Yellow Jacket at 765 per foot b 10.  
 3 sbs Yellow Jacket at 740 per foot.  
 3 sbs Yellow Jacket at 750 per foot.  
 10 sbs Bullion at 22 per share, b 10.  
 10 sbs Bullion at 22 per foot, s 10.  
 30 sbs Bullion at 23 1/2 per share b 30.  
 10 sbs Bullion at 22 1/2 per share, s 30.  
 85 sbs Bullion at 24/22 per share.  
 5 sbs Sierra Nevada at 4 per share.  
 1 sh Empire M & M Co. at 193 per sh, s 30  
 1 sh Empire M & M Co. 195 per sh b 10.

AFTERNOON SESSION.

20 shs Bullion at 234 2/25 per foot.  
 20 shs Daney at 14 1/2 per share.  
 30 shs Chollar-Potosi at 239 2/27 per foot.  
 10 shs Chollar-Potosi at 236 2/25 per sh b 30.  
 20 shs Chollar-Potosi at 229 2/27 per ft a 30.  
 35 shs Chollar-Potosi at 231 2/27 per foot.  
 1 sh Savage at 250 per foot, b 30.  
 1 sh Savage at 245 per foot, a 30.  
 1 sh Savage at 2025 per foot, a 30.  
 1 sh Savage at 2035 per foot.  
 15 shs Antidotee at 20 per share  
 5 shs Imperial at 180 per share, b 30.  
 10 shs Imperial at 175 per share, b 30.  
 2 shs Sierra Nevada at 4 per share.  
 3 shs Belcher at 182 1/2 per foot.  
 10 shs Yellow Jacket at 750 7/15 per foot.  
 5 shs Yellow Jacket at 750 per foot.  
 4 shs Yellow Jacket at 733 per foot.  
 2 shs Yellow Jacket at 740 per ft., a 30.  
 6 shs Yellow Jacket at 750 per foot b 30.  
 3 shs Yellow Jacket at 745 per foot a 10.  
 4 shs Yellow Jacket at 735 per foot, a 10.  
 2 shs Yellow Jacket at 740 per foot b 10.  
 4 shs Crown Point at 925 per foot.  
 4 shs Crown Point at 915 per foot, a 30.  
 4 shs Crown Point at 900 per foot, a 30.  
 4 shs Crown Point at 930 per share b 30.  
 4 shs Gould & Curry at 550 per foot a 30.  
 4 shs Gould & Curry at 575 per foot.  
 Amount of sales ..... \$172,634 00

Thursday, February 7.

12 sh Gould & Curry at 580 per foot.  
 12 sh Gould & Curry at 670 per foot.  
 5 sh Cal. Steam Nav. Co. at 60½ per cent.  
 7 sh Chollar-Potosi at 234½ pr ft s 10.  
 25 sh Chollar-Potosi at 231 per foot s 30.  
 57 sh Chollar-Potosi at 235 per foot.  
 13 sh Yellow Jacket at 700/775 per ft.  
 8 sh Yellow Jacket at 650/770 per ft s 30.  
 5 sh Yellow Jacket at 750 per foot, s 5.  
 21 sh Yellow Jacket at 770/760 per foot.  
 20 sh Bullion at 21½ per foot.  
 20 sh Bullion at 23 per foot.  
 2 sh Belcher at 132½ per foot.  
 2 sh Belcher at 135 per foot.  
 35 sh Ophir at 145 per foot.  
 10 sh Empire Mill & M. Co. at 187½ per sh.  
 5 sh Empire M & M. Co. at 190 per sharo.  
 20 sh Daney at 5 per foot.  
 16 sh Crown Point at 650/830 per ft s 30.  
 1 sh Savage at 2100 per foot, 30 d.  
 6 sh Savage at 2150 per foot, b 30.  
 3 sh Savage at 2065 per foot.  
 3 sh Savage at 2125 per foot.  
 10 sh Confidence at 27½ per share.  
 13 sh Confidence at 26½ per share.  
 50 sh National Insurance at 73 per sh s 3r.  
 65 sh National Ins. Co. at 73 per share.

AFTERNOON SESSION.

5 sbs Overman at 24½ per share.	
2 sbs Overman at 24 per share.	
40 sbs Confidence at 25 per share.	
40 sbs Confidence at 22 per share, # 30.	
30 sbs Confidence at 25 per share, # 30.	
1 sbs Empire M. & M. Co. at 19½ pr sh. # 30	
1 sh Empire M. & M. Co. at 19½ pr sh. # 30.	
8 sbs Crown Point at 90 per foot.	
5 sbs Cal Steam Nav Co at 50 per ct. # 30.	
10 sbs Chollar-Potosi at 235 per foot.	
6 sbs Chollar-Potosi at 237½ per foot.	
10 sbs Chollar-Potosi at 24½ per ft b # 30.	
5 sbs Chollar-Potosi at 235 per foot # 30.	
2 sbs Savage at 2125 per foot.	
1 sb Savage at 2025 per foot.	
20 sbs Yellow Jacket at 760 per foot.	
6 sbs Yellow Jacket at 795 per foot.	
2 sbs Yellow Jacket at 760/770 per ft # 30.	
1 sh Yellow Jacket at 785 per foot # 10.	
1 sh Yellow Jacket at 795 per foot b # 10.	
2 sbs Yellow Jacket at 790 per foot b # 30.	
\$10.000 Legal Tender Notes at 73½ c b.	
\$20.000 Legal Tender Notes at 73½ c.	
Amount of sales .....	\$192,367 00

**Friday, February 8.**  
5 shs Confidence at 26 per share b 30.  
5 shs Confidence at 24 per share s 10.  
20 shs Confidence at 25 per share.  
15 shs Confidence at 27 per share.  
15 shs Confidence at 23 3/4 per share.  
25 shs Chollar-Potosi at 236 per foot, s 30.  
10 shs Chollar-Potosi at 245 per foot. b 30.  
10 shs Chollar-Potosi at 240 per share b 30.  
10 shs Chollar-Potosi at 240 per foot b 15.  
3 shs Chollar-Potosi at 237 1/2 per sb, s 10.  
15 shs Chollar-Potosi at 240 per foot.  
9 shs Chollar-Potosi at 237 per foot.  
6 shs Savage at 1900 per foot s 30.  
5 shs Savage at 1975 per foot, s 30.  
2 shs Savage at 1910/1920 per foot.  
4 shs Crown Point at 950 per foot.  
12 shs Gould & Curry at 685 per foot.  
12 shs Gould & Curry at 560 per foot.  
36 shs Ophir at 145 per foot.  
20 shs Yellow Jacket at 800/790 per foot.  
1 sb Yellow Jacket at 800 per foot, s 10.  
1 sb Yellow Jacket at 800 per foot, b 10.  
12 shs Yellow Jacket at 785/190 pr ft s 30.  
2 shs Yellow Jacket at 800/805 pr ft b 20.  
10 shs Bullion at 21 1/2 per share, b 10.  
10 shs Bullion at 21 per share b 10.  
25 shs Bullion at 20/21 per share.  
20 shs Sierra Nevada at 4 per share.

3500 Legal Tender Notes at 73½c.  
 AFTERNOON SESSION.  
 16 shs Bullion at 22½ per share.  
 6 shs Bullion at 23½ per share b 30.  
 20 shs Overman at 26½ per share.  
 16 shs Bullion at 26 per share.  
 4 shs Crown Point at 47½ per foot.  
 5 shs Chollar-Potosi at 235 per foot b 30.  
 5 shs Chollar-Potosi at 235 per foot b 10.  
 15 shs Chollar-Potosi at 240 per foot b 50.  
 23 shs Chollar-Potosi at 255 per foot.  
 10 shs Confidence at 24 per share s 30.  
 10 shs Confidence at 26 per share, s 10.  
 6 shs Confidence at 27½ per share, b 30.  
 74 shs Confidence at 21½ per share.  
 7 shs Cal Steam Nav Co at 60½ per cent.  
 4 shs Belcher at 132½ per foot.  
 2 shs Belcher at 135 per foot, b 30.  
 3 shs Savage at 150 per foot, b 30.  
 1 sh Savage at 1915 per foot, s 5.  
 1 sh Yellow Jacket at 790 per foot s 10.  
 4 shs Yellow Jacket at 780 per foot, f, s 30.  
 2 shs Yellow Jacket at 810 per foot, b 30.  
 2 shs Yellow Jacket at 810 per foot, b 30.  
 Amount of sales .....\$435,345.00

# MINING SHAREHOLDERS' DIRECTORY

[Compiled for every issue, from advertisements in the  
MINING AND SCIENTIFIC PRESS and other San  
Francisco Journals].

Comprising the Names of Companies, District or County of Location; Amount of Assessment; Date of Meeting; Day of Delinquency; and Amount and Time of Payment of Dividends.		
NAME, LOCATION, DATE AND AM'T OF ASSESSMENT.	DAY	DAY
	DELINQUENT.	OF SALE.
Abernathie, Gold Hill, Jan 1st, \$5.	Feb 1—March 4	
Arizona Cons. M. Co. \$500.	Feb 15—March 4	
Baldwin, Gold Hill, Jan 1st, \$5.	Feb 1—March 4	
Belle Ledge, G. & S. M. Co. El Dorado co.	Meeting Feb 2	
Bell, El Dorado Co. \$5.	Feb 1—March 4	
Belcher Co. \$5.	Feb 1—March 4	
Big Blue Lead U. & S. M. Co. \$10.	Feb 18—March 12	
Bonanza American G. & S. M. Co. \$2.	Feb 18—March 12	
Cliphorn, Co. \$5.	Mar 8—Mar 25	
Cherokee Flat M. Co. \$5.	Feb 25—Mar 1	
Coe's S. M. Co. \$1.	Jan 21—Feb 1	
Crown Point, dividend.	Payable Jan 13	
Crown Point G. & S. M.	Special Meeting Feb 1	
Diamond Copper M., Del Norte, Feb 4, \$2.	March 9—April 1	
Daney, G. & S. M. Co.	Feb 25—Mar 1	
Empire M. & M., dividend.	Payable Feb 1	
Evans Cons Copper M. Co. 25c.	March 29—March 13	
El Tesoro S. M. Co. \$1.	Mar 4—Mar 2	
Geo Washington G. & S. M., Feb 6, \$3.50.	March 9—March 25	
Great Central M. Co. \$1.	Jan 28—Feb 1	
Golden Rule M. Co. \$100.	Payable Jan 1	
Golden Rule M. Co., dividend.	Payable Dec 2	
Hoppe Gravel M. Co. \$1.	Feb 23—March 11	
Dale & Norcross, dividend.	Payable Jan 1	
Imperial G. & S. M. Co., dividend \$3.8	Payable Jan 1	
I. L. G. & S. M. Co. \$1.50.	Feb 15—March 1	
Julia G. & S. M. Co. \$5.	Feb 16—March 6	
Keystone M. Co. \$1.	Feb 28—Mar 2	
Keystone M. Co. Calaveras Co. \$10.	Jan 21—Feb 1	
Lady Bell Copper 10c.	Feb 23—March 13	
La Blanca G. & S. Co. \$2.	Mar 25—Apr 1	
Norparell G. S. M. Co. \$1.50.	Feb 23—Mar 1	
Nor F. S. H. & R. K. Ass. \$12.50.	Feb 12—Mar 10	
Oxford Beta Tunnel M. Co. 50c.	Feb 4—Feb 25	
Opfir S. M. Co. \$5.	Feb 11—March 1	
Opfir S. M. Co. \$5.	Jan 28—Feb 1	
Patroles & Dolores S. M., Mex., Feb 1, \$3.	Mar 5—Mar 1	
Prudenz & M. Pumas co.	Election Meeting Feb 1	
Rattlesnake G. & S. Co. \$1.	Feb 8—Feb 25	
San Marchal S. M. Co. 50c.	Mar 6—Mar 30	
Siskiyou M. Co. \$5.	Mar 25—Apr 1	
Savane S. M., Virginia City, dividend \$100.	Payable Feb 1	
Sumner G. & S. M. Co. \$5.	Feb 11—March 1	
Stucky Valley G. & S. M. Co., dividend.	Payable Feb 1	
Silver Lake, Virginia City, dividend.	Payable Feb 1	
Tuolumne Mountain G. & S. M. Co. \$1.	Dec 4—Feb 2	
Texas Flat M. Co., 25c.	Jan 20—Feb 2	
Yosemite M. Co. \$1.75.	Mar 1—Mar 23	
Yellow Jacket S. M. Co., div. \$50 sh.	Payable Jan 1	

\*Those marked with an asterisk (\*) are advertised in the journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, February 8, 1867.		
MISCELLANEOUS STOCK	Gold	Advances
United States 7 3/4-10ths Bonds June issue.....	74 1/2	74 1/2
Legal Tender Notes.....	74	74
California State Bonds, 7s, 1857.....	90	90
San Francisco City and Co. Bonds, 7s, 1862.....	100	102 1/2
San Francisco City Bonds, 6s, 1855.....	80	95
San Francisco City and County Bonds, 6s, 1858.....	71	73
San Francisco City and Co. Sec'd Bonds, 7s, 1866.....	80	80
San Francisco City and Co. Bonds, 7s, 1864.....	80	80
San Francisco City and Co. Bonds, 7s, 1864.....	81	84
San Francisco City and Co. Bonds, 7s, 1865.....	80	84
San Francisco City and Co. Bonds, 7s, 1865.....	80	84
San Francisco City and Co. Bonds, 7s, 1865.....	80	84
San Francisco City and Co. Bonds, 7s, 1865.....	80	84
Sacramento City Bonds.....	19	19
Sacramento County Bonds, 6s.....	57	69
Marquette Bonds, 10s.....	75	85
Yuba County Bonds, 10s.....	75	85
Yuba County Bonds, 10s.....	75	95
Santa Clara County Bonds, 7s.....	70	80
Butte County Bonds, 1860.....	70	80
San Mateo County Bonds.....	70	80
California Stearn Navigation Co.....	60 1/2	61
Springle Valley Water Co.....	62	62
State Telegraph Co.....	31	33

GAS COMPANIES.		
San Francisco Gas Co.....	64½	65
Sacramento Gas Co.....		60
RAILROADS.		
Sacramento Valley Railroad.....	—	40
San Francisco and San Jose Railroad.....	40	45
Omnibus Railroad.....	67	68
Central Railroad.....	—	62
North Beach and Mission Railroad.....	47½	62
Front Street, Mission and Ocean Railroad.....		18
BANKING INSTITUTIONS.		
California, Loan and Savings Society.....	—	—
Bank of Pacific Accumulation Loan Society.....	94	—
The Bank of California.....		139
INSURANCE COMPANIES.		
Fireman's Fund Insurance Co.....	—	105
Pacific Insurance Co.....	150	138
San Francisco Insurance Co.....	—	139
California Insurance Co.....	400	150
Merchants' Mutual Marine Insurance Co.....	150	171
Union Insurance Co.....	—	119
California Home Insurance Co.....	—	92
Home Mutual Insurance Co.....	—	90
Occident Insurance Co.....	90	95
National Insurance Co.....	70	78

MINING STOCKS—WASHOE DISTRICT.		
Alpha.....	—	180
Baltimore American.....	—	8
Behler.....	130	22
Callow.....	95	100
Crown Point.....	24	26
Confidence.....	236	237
Chollar-Potosi.....	—	1
Gold.....	—	1
Exchequer.....	—	1
Empire Mill and Mining Co.....	192½	195
Gold and Curry.....	560	670
Golden Horseshoe.....	230	230
Imperial.....	165	176
Lady Bryan.....	—	—
Ophir.....	145	180
Peckham.....	24	24
Savage.....	192½	190
Yellow Jacket.....	790	840
Oolden Rule, California.....	10	15

### San Francisco Market Rates.

### Wholesale Prices.

FRIDAY, FEBRUARY 8, 1897.	
Flour, Extra, $\frac{1}{2}$ bbl.	\$5 50 @ \$5 25
Do, Superfine	1 60 @ 1 50
Do, Special	2 00 @ 1 75
Wheat, $\frac{1}{2}$ 100 lbs.	1 35 @ 1 17
Oats, $\frac{1}{2}$ 100 lbs.	1 05 @ 90
Barley, $\frac{1}{2}$ 100 lbs.	1 00 @ 90
Beans, $\frac{1}{2}$ 100 lbs.	2 00 @ 3 00
Potatoes, $\frac{1}{2}$ 100 lbs.	50 @ 25
Hay, 1 ton	10 00 @ 10 00
Do, Oak Wood	8 00 @ 10 00
Beef, on foot, $\frac{1}{2}$ b.	6 @ 10
Beef, extra, dressed, $\frac{1}{2}$ b.	6 @ 10
Sheep	3 00 @ 3 50
Hogs, on foot, $\frac{1}{2}$ b.	6 @ 6 50
Hogs, dressed, $\frac{1}{2}$ b.	8 @ 8 50
GROCERIES, ETC.	
Sugar, crushed, $\frac{1}{2}$ b.	10 @ 13 50
Do, China	9 @ 10
Colfee, Costa Rica, $\frac{1}{2}$ b.	22 @ 20
Do, Rio	20 @ 22 50
Tea, Japan, $\frac{1}{2}$ b.	80 @ 80
Do, Green	60 @ 1 25
Hawaitan Rice, $\frac{1}{2}$ b.	6 @ 6 50
China Rice, $\frac{1}{2}$ b.	13 @ 13
Do, oil, $\frac{1}{2}$ gallon	30 @ 30
Candles, $\frac{1}{2}$ b.	16 @ 23
Ranch Butter, $\frac{1}{2}$ b.	18 @ 18
Table Butter	20 @ 20
Cheese, California, $\frac{1}{2}$ b.	20 @ 35

Lard, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$ @	13
Ham and Bacon, $\frac{1}{2}$ lb.....	18 @	20
Shoulders, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$ @	14

### Retail Prices.

Butter, California, fresh, $\frac{1}{2}$ lb.	40	@	50
do. pickled, $\frac{1}{2}$ lb.	30	@	35
do. Oregon, $\frac{1}{2}$ lb.	30	@	40
do. New York, $\frac{1}{2}$ lb.	40	@	50
Cheese, $\frac{1}{2}$ lb.	15	@	25
Honey, $\frac{1}{2}$ lb.	30	@	40
Eggs, fresh, $\frac{1}{2}$ doz.	50	@	50
Lard, $\frac{1}{2}$ lb.	15	@	16
Hams and Bacon, $\frac{1}{2}$ lb.	22 $\frac{1}{2}$	@	25
Granberries, $\frac{1}{2}$ gallon	100	@	1 00
Peas, $\frac{1}{2}$ lb.	10	@	10
Potatoes, sweet, $\frac{1}{2}$ lb.	11 $\frac{1}{2}$	@	2
Tomatoes, $\frac{1}{2}$ lb.	1	@	5
Onions, $\frac{1}{2}$ lb.	3	@	5
Apples, $\frac{1}{2}$ doz.	8	@	10
Pears, Table, $\frac{1}{2}$ lb.	8	@	10
Plums, dried, $\frac{1}{2}$ lb.	20	@	22 $\frac{1}{2}$
Peaches, dried, $\frac{1}{2}$ lb.	12	@	15
Oranges, $\frac{1}{2}$ dozen	75	@	75
Lemons, $\frac{1}{2}$ dozen	75	@	75
Cheese, apple	50	@	75
Pork, $\frac{1}{2}$ lb.	20	@	10
Soap, Pale and G. O.	14	@	13
Soap, Castile, $\frac{1}{2}$ lb.	14	@	13

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NITRO-GLYCERINE.—Mr. Swanson is at  
Smartsville, Yuba county, testing the use of  
Nobel's blasting oil for running bedrock  
tunnels in the claim of the Blue Point  
Gravel Mining company.

GOSNELL & Co.'s London invention, for  
brushing hair by machinery, has found its  
way to San Francisco.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Amador County.

The *Ledger* of February 2d says: In speaking of the Crafts mine, last week, we should have said that the ore worked by Ambler & Co. paid \$470 to the ton.

## Calaveras County.

From the *Chronicle* of February 2d: We were shown, this week, the result of an analysis of some silver ore taken from the Montgomery claim, Humboldt district. It assayed \$200 per ton in silver, with a slight trace of gold.

Mr. Reynolds, of the Pine Peak claim, at Railroad Flat, showed us some of the richest specimens of quartz rock from that mine that we have ever seen. The ledge, at the depth of fifty feet, is two feet in width, and it increases in size as the shaft is sunk.

Letter from San Andreas to same: The quartz mill of Tubbs & Co. has been removed; it is, however, asserted that the lode has not been fairly tried, and other parties will give the lead another trial. The quartz mill of J. McGlenn & Co. has discontinued labor; another lode near Prospect Hill, had about five tons crushed which proved worthless, paying about one dollar and a half to the ton. The "Everlasting" is laying idle. There is some good quartz here. One lot of fifteen tons paid in the mill at Lower Calaveritas ten dollars per ton. Parties from Chile Gulch have paid for developing this mine so far. The Willow Creek lode has been lost by injudicious or ignorant working. Ten tons of this rock paid about seven dollars per ton, but it is asserted that about four hundred dollars worth of gold specimens had been carried off during the excitement. Adams & Co. have also quit work. The vein of Ritter & Co. needs another trial. The Sandy lode is an extension. The Union mine has been worked to water level, 150 feet, and the quartz extracted has paid about fifteen dollars per ton, on the average; some capitalists will some day follow downward this mine, and be well paid for so doing. The vein is from one to four feet wide. Bachman's claim, at Fourth Crossing, is on the same lode as the former, and the owner is working singly and doing well with a hand-mortal. Thorpe & Co's lode is believed to be as good as the old Winter lode at Angels; its appearance and prospects are very good. Wood & Co's mine, on Dry Creek, is a large one, but it is standing still. To the east of these lodes there has been much prospecting in quartz. In El Dorado, a wide lode is paying four dollars per ton on an average; another vein above Tunnel Hill, on the San Antonio ridge, has been worked with flattering prospects, but is idle at present. Another lode on Indian Creek, above Davis' ranch, is owned by Mexicans who recently crushed ten tons of rock in Lower Calaveritas—yield not known. The lode is from two to five feet in width, the quartz is rich and easily extracted. On the San Domingo the Fair Play has a good reputation; ore crushed by arrastras and has yielded well. Between this and Murphy's camp quite a number of quartz veins have been discovered which prospect well. Dan McKay & Co. had twenty tons of their quartz crushed, which yielded seventy-five dollars per ton. The gold is finely diffused in all the quartz; the vein is two feet wide, the shaft seventy feet down, slate for walls, quartz easily extracted. Many other claims adjoining prospect equally as well, of from one to four feet in width, veins traceable for a long distance. Chilenos and Mexicans have discovered and prospected most of the veins around Murphy's, and a custom mill would be a good thing.

From the *Copperopolis Courier* of January 26th: We were shown, a few days since, a quantity of gold dust taken from Christian Gulch, about two and a half miles from this place, among which was a nugget of gold weighing 14½ ounces. "Dixie" has also struck it big in his claim on Rock Creek. One piece found by him last week was worth \$10.50.

## El Dorado County.

From the *Placerville Courier* of Feb. 2d: We learn that the second south extension of the Pacific ledge was discovered and located a few days since on the south side of Weber Creek, by parties who have been prospecting for it for seven months. What is still better, it is wide, well defined, and prospects rich. Indications point strongly in the direction of lively times throughout El Dorado county. The gravel deposits will pay for years to come. In this connection, we learn that a San Francisco foundry firm closed a contract this week, on a claim near the head of Cedar Ravine, for a one-half interest.

Georgetown correspondence of same says that as soon as the roads are in good condition for the transportation of heavy machinery, times will be lively in that region.

Nitro-glycerine is to be tried for blasting bedrock about Georgetown.

## Mariposa County.

From the *Gazette* of Feb. 2d: In Hunter's Valley, the Potts mine is turning out richer ore than ever before. The last clean up of about eighty tons yielded as high as \$54 per ton. The mine is 120 feet deep. The number of men working there at present is only twenty-two.

The Floyd mill is stopped for want of wood. The Barrett mill has also been motionless for some time, owing to a scarcity of quartz, which it is found quite impracticable to haul, just now.

We regret to learn that the La Victoire Copper Mining Company have suspended operations. The mine was making water very fast. We understand that the company have now under consideration the subject of selling the mine, as it stands, with all machinery and appurtenances belonging thereto.

The Lafayette mill is also stopped, for a while, on account of scarcity of wood and too much water in the mine.

This valley will take a start in a few months hence under better auspices than ever. Another quartz mill is to be erected on the Potts mine.

Wm. R. Carson, some time last week, found a pure nugget of gold, weighing about four pounds.

## Nevada County.

From the *Gazette* of January 28th: The Allison Ranch company are putting up a number of the Norton pans, for the purpose of working the tailings that have been accumulating at their mill for several years. It is expected that the tailings will yield a large amount of gold. We learn that forty pounds of amalgam was cleaned up at the Banner mill, last week, after four days run.

Same of 30th: The Birchville company have struck a rich quartz ledge near the town of Eureka. The company has run a tunnel one hundred and fifty feet, striking the ledge a few days ago, finding the rock remarkably rich, and the ledge of good size.

Same of February 1st: Mallory & Co., of You Bet, had a splendid clean-up from their cement mill this week. The company are in high spirits over their prospects. Brown Brothers made a brick of \$2,100, the result of five days crushing of cement.

February 2d: Mines are lively at North San Juan. Water for the miners is abundant, and more companies are at work in the vicinity of the town than at any time for some years back. Nearly all are doing well, and it is expected that the gold yield of the township for the present season will considerably exceed that of last year.

From the *Transcript* of January 29th: The company owning the extension of the Star Spangled Banner mine have a large lot of rock on the surface, and we understand that Stiles' mill will commence crushing on this rock as soon as it is repaired. The rock in the extension resembles very much that taken at the same depth from the Banner mine.

The excellent hoisting works recently completed on the Whigham lead are working beautifully, and the mine still yields first-rate rock. A mill has been contracted for.

The California mill is nearly ready for work. The battery has ten 750-pound stamps. The pulp is run into Atwood's agitators, over Hungarian rifles and copper plates, a distance of twenty-eight feet, when it is dropped upon Bradford's separators. No pans will be used in the mill. It is expected that the mill will be ready for work in about ten days.

Letter to same from North Bloomfield, January 28th, says: The N. B. Gravel Mining company have worked with indefatigable energy. They have now about 700 feet of their main flume built. Its size is six feet wide and two feet deep. They have about eighty feet of their tunnel run. They have, also, by running a smaller tunnel, opened out one set of claims and made one run with good success, clearing some two thousand dollars.

C. Kniff has fitted up the old Pettijean diggings. He also made one run and cleaned up well, making five dollars per day to the hand.

R. C. Black has just cleaned up the snug little sum of eleven hundred dollars for eight days run.

The Jenny Lind company have been washing three or four days, but on account of the present heavy fall of snow have suspended operations for a time.

Same of 30th: The incline on the Cunningham mine is now down 150 feet. The ledge is two feet wide, and increasing.

Same of Feb. 2d: Among the companies

at San Juan who have started work are the Star, Ohio, Wyoming and Golden Gate. The New England Company is a new one.

The Empire Company at Kate Hays Flat, near French Corral, after their usual run, cleaned up a few days ago, and took out between eleven and twelve thousand dollars.

At Eureka, the Golden Age Company recently struck a ledge which promises well. The mill of the Jim Company is not running at present. They are running a main tunnel, and prospects are good.

Same of 5th: In Little York township, Mallory & Co., Heydliff and Collins, have made rich strikes in their cement claims, and are increasing the number of hands employed. Neece & West are also at work and have first-rate cement. The South Yuba hydraulic claims are being worked, but have not yet cleaned up. Many other gravel claims are being worked with good returns. Some attention is also being paid to the development of quartz mines. Work was resumed on the Aurora lead on Monday last. Sixteen pounds of rock from a depth of thirty feet paid \$3.70 in gold.

From the *Grass Valley Union* of January 29th: The new pump of the Cambridge Company works to a charm.

The ore now being taken from the Lucky mine is as rich as anything ever seen in this vicinity.

EXCELSIOR.—The Meadow Lake *Sun* of Feb. 2d, says: The Golden Eagle Company's mill will start up on Monday noon, Feb. 4th. It is one of the most convenient and best constructed mills in the district.

## Placer County.

From the *Stars and Stripes* of Jan. 30th: The Dardenelles claim near Forest Hill, which has been successfully worked for a long series of years, is now being operated on a large scale. A "face" of nearly two hundred feet in height, by over eight hundred in breadth, is subjected to the action of three hydraulic pipes and the auriferous gravel is being moved by acres. We understand that this claim has never been in so good condition as at present.

On Red Ravine, a short distance above Opbir, the 5-stamp quartz mill recently erected by Mr. G. F. Hartwell, Assistant Superintendent of the C. P. R. R. went into operation on Thursday last, and we understand that it works most satisfactorily.

Rich specimens of "float" are often met with in this vicinity. Several parties are engaged in gathering together conveniently for crushing, heaps of the detached and scattered fragments of quartz rock, of which comparatively exhaustless quantities are found "lying round loose." We are informed that one company near here has already gathered up no less than 400 tons and has a large number of hands employed collecting more.

The Columbia's Pride Company had 26½ tons of rock crushed at the Stewart's Flat mill, which yielded about \$28 per ton. The rock has laid on the ground through all the rain for two or three months, and has been handled so much that there was a great deal of dirt and water mixed with it. They had everything crushed—surface rock and all—and as soon as the weather permits, it will be worked night and day.

Same of February 6th: Captain Mallett has his new cement mill on Badger Ravine, near Gold Hill, nearly completed and ready for operations. It would have been working ere this, but for detention of a few articles of necessary machinery en route from below.

The Wells company, near Bald Hill, have over one hundred tons of rock out ready for shipment to the Ophir mill whenever the roads get in condition. The last rock crushed from this lead yielded \$17.50 per ton. The greater proportion of that now on hand appears much richer than the last crushing.

The Oro mine, adjoining the celebrated Dardenelles claim, is now being actively worked. There is a fine 20-stamp mill on the Oro, through which the cement is being worked in large quantity. A pan for crushing and grinding sulphurets is being set up, and will be in operation in a few days.

From the *Dutch Flat Enquirer* of January 30th: Last week the large iron pipe laid down last fall at a considerable expense by the Dutch Flat Water Company, burst from the great strain caused by the pressure, the pipe being quite full. The Yuba Ditch, which conveys the waters of the South Yuba to the miners at Gold Run and vicinity, continues right side up.

## Shasta County.

From the *Courier* of Jan. 26th: William Logan, just down from Dog Creek, states that the miners on that stream are realizing good pay this winter, although the heavy storms have to some extent interfered with their operations. Ismon & Baylis own a good bar claim, and have nearly completed a self-discharging reservoir.

The rains have increased the facilities for working the bars on Flat Creek. The experience of the Brumfield brothers has demonstrated that the high bars along the creek will pay if properly worked.

Same of Feb. 2d: E. F. Crocker, whose experience entitles his opinions to consideration, thinks that the quartz ledges on Whiskey Creek show more evidence of richness and permanency, than any other series of ledges he has examined in the county. The ledges are generally very wide, well defined, and prospect in free gold from the top to the bottom of every shaft.

Last week a couple of miners concluded to test some of the rock from a ledge of decomposed quartz near Farrington's mill, on Brandy Creek, and after reducing several pounds of the croppings in a common hand mortar, cleaned up thirty-seven dollars.

Copper City is now almost deserted, work is entirely suspended on all the quartz claims, and but six or seven men remain in the place. Two years ago it contained a population of two or three hundred.

From the *Red Bluff Independent* of Jan. 30th: Within a day's ride of this place is a mining camp, comparatively insignificant at present, but promising to rival the famed Comstock ledge in richness, if not in quantity of ore. The silver mines of Shasta county, located on the south fork of Clear Creek, are as yet comparatively undeveloped, but so far the attention of capitalists has been withdrawn in other quarters. The indications are, that as soon as the wet weather subsides and travel becomes easy, a large number of San Francisco capitalists will visit these mines. \* \* The Shasta silver mines possess great and manifold advantages over those of Virginia City, a few of which may be briefly enumerated. The first is water power, which never fails, thus avoiding the first cost of steam machinery, as well as the wear and tear of boilers. Second, the abundance of wood for suitable fuel to roast the ores. Last, is the proximity of good farming land, enabling the miners to procure supplies of all kinds at least forty per cent. lower than in Virginia City.

## Sierra County.

From the *Downieville Messenger* of Feb. 2d: The Good Hope company has let a contract to run a new tunnel to prospect their ledge lower down. The contractors have already reached the ledge, and are now breasting out rock.

The Slug Cañon Quartz mill, which was temporarily stopped on account of snow filling up the flume and clogging the wheels, is again in running order, and crushing its usual amount of rock with flattering prospects. Every pound of rock taken out prospects immensely.

We visited the Vienna, a few days since, and took a hand in prospecting some of the rock. It was impossible to find a piece of rock that did not yield a fine prospect, while in almost any part of the ledge free gold could be seen. The mineral is in about twenty feet. The ledge is about four feet wide.

Letter to same from Poverty Hill says: Thomas Hawkins has sold one-half his diggings to the Messrs. Kingdon, of Secret Diggings, for eight thousand dollars.

## Tulare County.

The *Visalia Delta* of January 30th says: This important branch of industry was never so prosperous in this part of the State as at present. Prospectors are discovering new lodes in all directions, while the old discoveries are being worked with increased vigor and success. A little time, and a little more capital is all we need to make this the leading mining region of the State.

## Yuba County.

From the *North Californian* of February 4th: The Pennsylvania Mining company made a clean-up yesterday—the neat little sum of between ten and eleven thousand dollars was taken out.

Letter from Camptenville to the *Messenger* of February 2d: We have been not less favored than the rest of the State with copious rains, and of course water is more than plenty, and still times are dull. B. P. Hogg & Co. have their tunnel nearly completed, and will resume washing in a few weeks.

## ARIZONA.

From the *Miner* of Jan. 12th: The clean up of the Dividend, at Big Bug, has just been reported. The result is \$40 per ton. The working was done at the Borger mill.

Connected with the Borger mill at Big Bug are several furnaces, now in successful operation.

A letter from W. Thompson, superintendent of the Springfield Company, at Williams' Fork copper mine, gives a most encouraging account of prospects there. Messrs. Spaulding, Bickle, Buchanan and Lake, of Lynx Creek, have constructed a



wagon road a couple of miles long, dug an excellent ditch for water power, built a 20-foot water wheel and arastra, and are now engaged in grinding rock.

#### COLORADO.

A letter from Red Mountain to the *Denver News* of Jan. 16th, has the following: That these mines are rich, there is no longer any doubt. The veins that have been developed to the depth of from ten to twenty feet show a continuous vein of ore that assays very rich. The lodes of this region must be very rich, as fine gold is found all over the valleys and in all the little ravines in the surface soil. The placer diggings of Lake county are unrivaled. The gold taken from all of them shows unmistakable evidence of its origin in the lodes.

Cash Creek Park correspondent says: Cash Creek Park, literally speaking, is one vast placer gold mine. It is almost impossible to find a single pan of dirt on the most elevated portions of the Park, that will not yield from one to half a dozen colors of gold, while all the principal gulches and small ravines that traverse it, are rich placer diggings.

Cash Creek Gulch has been mined for seven years with success, and now bids fair to become one of the most prolific gold mines in Colorado. Large amounts of gold have been taken from the banks on either side of the gulch. Gold Run and Richie's patch diggings have paid, so far, remarkable well. The Richie patch mine has been and is yet extraordinarily productive. Hundreds of nuggets have been picked up in the pit that weighed from two to sixty dollars of wire gold, and of great fineness. The diggings are shallow; the bedrock lying from two to five feet below the surface. Gibson Gulch is rich, yielding from five to fifteen cents to the pan.

Yuba Gulch, first above Gihson, bids fair to pay well. Long's Gulch, just above Yuba, prospects fairly with the pan. It is very long and will be easy to work for the reason that any amount of water can be brought to it at small expense.

#### IDAHO.

From the *Owyhee Avalanche* of Jan. 19th: We have good authority for saying that uncommonly rich ore is now being taken from the Whisky Gulch mine, and that the miners have thirty or forty tons ahead of their contract for the Shoenbar mill.

The value of bullion and gold dust shipped by Wells, Fargo & Co., from their office in Ruby City, for the year ending December 31st, was a little more than \$750,000.

An Idaho letter to the *Times* of Jan. 31st, says: It will be two years at least ere the mills—with the best management—now erected in Idaho, will find steady employment; and thus far the operations have been characterized by the most verdant manipulations—considering the amount of capital expended and the general result. That the best of mineral-bearing veins exist in this Territory, and in abundance, none who have visited it with a view to investment, pretend to deny.

A new county called Lemhi, has been created in Northern Idaho. This is the Salmon River region.

A letter to the *Montana Post*, dated Grantsville, Dec. 30th, has these items: A new gulch has been discovered by Messrs. Buckhart & Co., who have organized a new district called "Welfoot." The gulch is about three miles long, and prospects twelve cents to the pan wherever a hole has been sunk. We have good news from Rapp's Gulch. Messrs. Pope, Moore & Co. have washed out of fifteen pans \$34.20 of as pretty, coarse gold as a man need look at, and out of one hundred and sixty pans of dirt taken off the gravel above the bedrock, got \$48, making an average of twenty cents per pan. Among the lucky owners of ground in this gulch are Messrs. J. A. Cook and R. T. Harris & Company.

During the last week gold was discovered in Eureka Hill, above the main creek. The discoverers say it prospects from five to twenty cents through eight feet of gravel.

Letter to the *Virginia Enterprise* says of these mines: Salmon River diggings are still being talked of and loudly. Every one seems to be of the opinion that they are the "richest yet discovered," and consequently great preparations are being made for a grand rush so soon as the roads will permit. Even now, every day, over the snow they go, to the new El Dorado.

#### MONTANA.

From the *Post* of Jan. 12th: Mr. Hendrie's 20-stamp quartz mill, located in New York Gulch, will commence operations on next Monday. For the present, however, but ten stamps will be used, they being all the owner has now on hand.

One hundred and fifty claims were taken up in Wisconsin Gulch at the late stampede. On No. 2 west, on the Whitlatch Union

lode, Professor Hodge, superintendent and agent of the New York Gold and Silver Exploring and Mining Company, is now working some forty men, is down over 100 feet, and taking out some splendid-looking rock. Whitlatch, on No. 3 west, on the same lode, has about thirty-five men at work "breasting out" on the incline and running the side drifts; they also continue to take out rich ore. Work is also being done on some of the other lodes, but by far the greater portion is at present put on the Union. Judge Turnley's mill has, up to the present time, made five separate runs, averaging eighty-one tons of rock at each, or a total of four hundred and five tons of ore crushed, which has yielded in round numbers the sum of \$26,000, being an average per ton of \$64.19, and lacks but a fraction of being the even twenty cents. The last clean-up made from this mill was on last Friday, and was \$6,000 from ninety-five tons of ore, or an average per ton of \$63.15.

Bush's mill, on the Lucas lode, made a clean-up of four and a half day's run, last week, which panned out \$850; an average of \$30 per ton. Colonel Postlewait has taken out of the Kearsarge lode over three hundred tons of quartz. His mill is progressing rapidly toward completion, and will be in complete running order inside of a fortnight.

#### MEXICO.

Some very rich ores from the Patrocinia and Dolores mine in Chihuahua, recently arrived by steamer in this city.

A letter to the *Bulletin* from La Paz, Lower California, thus speaks of the Triunfo mine near San Antonio: "I have seen enough to satisfy me that the Triunfo Company have as much metal in view now as was ever seen at once in all the openings in the Comstock vein. Let those who are inclined to sneer withhold judgment two or three months, and then, if they are not convinced by substantial proofs, I am willing to acknowledge myself mistaken. The Triunfo Company has seven mines situated on two parallel veins. Of these two are now producing ore in large quantities, and there are now over 1,100 tons awaiting the completion of the mill. Before you receive this, the mill will be running with a working capacity of about twenty tons per day. The method of reducing the ore adopted here has already been used successfully in a 10-stamp mill, but the capacity of that mill not being sufficient, one of twenty-four stamps has been put up by Mr. Brooks, the agent of the company, and as soon as the quicksilver is received by the steamer, now due, you will hear their results. Two other mines, worked by a Mexican company are in full operation, and a cargo of ore from them is now lying in the harbor. One of these mines has been worked successfully for nine or ten years past, but inasmuch as no Americans are interested, and none of the ore ever passes through San Francisco, little is known of them there."

#### NEW MEXICO.

The *St. Louis Democrat* of Jan. 11th, says: Dr. Steck, of the Placer Mining Company of New Mexico, arrived on Friday last with a considerable amount of gold dust. He left an order for a 10-stamp mill. It is said that the quartz of the Placer Mountain about thirty miles from Santa Fe, turns out some \$300 per cord. With a small 5-stamp mill, Dr. S. extracted two hundred ounces in the space of two months. These mines have been worked, at times, for some 150 years. The present association is the result of efforts commenced five or six years ago, to establish a company for the re-opening of the old works. Other lodes have recently been discovered in a westerly direction from this point, which give evidence of richness.

#### NEVADA.

##### Black Rock.

From the *Nevada Gazette* of Jan. 30th: Capt. Frank Coffey writes to a friend in Sweetland on the 11th inst., that he and his partner own 6,000 feet of ledges, in which there is rock enough in sight to keep fifty mills running for fifty years, and assays made of the rock yield from \$2,000 to \$7,000 a ton. He says the mines are mostly owned by Honey Lake men, but the owners have no idea of their value. Parties representing Virginia City operators are buying up all the choice claims.

##### Humboldt.

From the *Register* of Jan. 26th: Reports concerning the Agamemnon ledge are conflicting. The boys at work in the tunnel think it is not the main vein, but only large feeders that have been struck; and the croppings below the shaft would seem to make good this belief. The water has not receded in the shaft, as it would likely do if the ledge had been tapped within eight feet of it. The mineral is a sulphuret of silver, copper and lead, and very rich.

Operations have been suspended for a few

days at the Trinity and Sacramento Company's works in Oreana. Nason is enlarging the works—making additions to the mill, extending the building over the old furnaces and erecting new ones. He has a new cupel furnace nearly finished and much larger than the one now in use, which will enable him to cupel ore as fast as it can at present be smelted. Improvements will be completed next week, when work will be resumed with increased energy.

Torrey, who for the past year and a half has been chief of the Manitowoc mine, is now at work in the Pioneer mill, cleaning up his last crushing, before commencing active work on his smelting furnaces in Arabia.

The Nevada mill, the best in Humboldt, and excelled by few in the State, lies idle for want of good management, certainly not for lack of good ore in that vicinity. A perpendicular shaft about 120 feet deep, on the Moutana ledge, failed to prove the mine a "Comstock." The average yield of ore as taken from the shaft, is only \$30 per ton, so the work has stopped and their fine mill has become dead property for the present. No drifts were run in this mine—nothing done to prove it, save the one shaft above mentioned. Webber hauled ore from the Montezuma mine, eight miles, up hill, to his mill in Trinity Cañon, and made it pay well, both for himself and the mine owners. The Wheeler, Daisy, Savannah, and several others from which abundance of ore can easily be extracted, are believed to be far above the average of good paying mines. Workmen on the Wheeler have 300 tons of ore extracted, ready for smelting, and taking out more daily. This ore has been proved by working tests, and the results show a margin for handsome profits.

##### Pahranaagat.

From the *Salt Lake Vedette* of Jan. 26th: Messrs. Crippen and Raymond arrived on Thursday from the Pahranaagat mines. The latter, as the representative of Eastern capitalists, has invested largely. Mr. Ely accompanied the party, he having sold out his interest for \$55,000. These gentlemen say that the results far exceed their most sanguine expectations. On the other side, we learn that Dr. Conger is not so sanguine, his operations not being so successful as the others, but it was in consequence of the failure in his smelting operations. There is sufficient evidence, however, that next spring there will be an extensive emigration to Pahranaagat, and the mines throughout Utah.

##### Reese River.

From the *Reveille* of Jan. 21st: The Ural Silver Mining Company are getting out some splendid ore from the Gould & Curry lode, Mammoth district, which will probably work \$120 per ton. Work continues on the American Flag with good results. Its incline shaft is 123 feet deep, and the ledge of nine feet, formerly much broken, is now compact. The Uncle Sam continues to yield excellent quartz. Work has been suspended on the shaft of the Mount Vernon Company for the last few weeks, but it will be resumed early the coming month. The levels have been pushed steadily, however, and a force has been employed to run a level north on the ledge cut by the tunnel.

The Consolidation Company's mill, Hot Creek, now works well. The stamps are light, and the capacity rated at four tons per day. There are no furnaces, and the ore is treated "raw." Three-quarters of a ton from Reveille district yielded at the rate of \$80 per ton.

Same of 24th gives a list of forty-seven mines which have produced bullion during the quarter ending Dec. 31st, compiled from the books of the County Assessor. We give the average yield per ton of a few of these mines: The Washington, \$419.52; Chase, \$405.10; Magnolia, \$338.23; Buel North Star, \$336.31; Semanthe, \$332.52.

The machinery of the 5-stamp mill is being erected in Reveille district for the Rutland and R. R. Company. The Fisherman ledge is yielding splendid mineral, and our informant states that the owners were asked what they would take for a certain lot of ore—estimated from six to seven tons; and they replied, after a moment's deliberation, that they would "not sell the lot for less than six bits a pound."

Same of 25th: The Child and Canfield ledge, Silver Bend district, has been traced on the surface nearly the entire extent of the claim, and in several excavations it is developed palpably and beautifully. In one of these cuts the ledge is five feet thick, exhibiting a handsome face of mineral.

Same of 30th: Yesterday Colonel Buel arrived in town with \$1,185 worth of bullion from his mill at Belmont. We are informed by the Colonel that this amount is the product of four and a half day's run of nine stamps, and that in eleven and a half

days, with the same number of stamps, the mill produced the large sum of \$13,200.

Same of 31st: Six bars of bullion, valued at \$5,500, arrived yesterday from the mill of the Twin River Company.

Same of Feb. 1st: Rich developments in the tunnel of the Combination Company are reported from Silver Bend. The tunnel is run to cut the Highbridge at the depth of ninety feet from the surface. It has been pushed in to the extent of 158 feet, at which point the ledge has been struck fourteen feet thick.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of January 29th: The new shaft of the Imperial and Empire Companies is now 765 feet deep, and rapid progress being made in sinking deeper. The water troubles but little, and it is proposed to sink the shaft to the depth of 900 feet, and from that point drift to the ledge.

The old whim of the Bajazette and Golden Era Company is being fixed up and put in order for work. It is now the property of the Chollar-Potosi Company, and will be used in the extraction of ore from the upper levels of their mine.

The dumps of all the working mines are full to overflowing, especially in Gold Hill, on account of the almost impassable state of the roads, rendering hauling to the mills nearly out of the question. In consequence of this a large proportion of the mills, both in this and Lyon counties, have had to suspend operations entirely. The Rock Point mill, on Carson river, belonging to the Imperial Mining Company, is still crushing away uninterruptedly at the rate of over 100 tons per day, with plenty of ore on hand.

Same of 31st: The sinking of the Bonner shaft of the Gould & Curry Company, which was re-commenced a short time since, is progressing finely. It is now some 750 feet deep. At the depth of 900 feet it is calculated that the ledge will be cut. The shafts of the Savage, Chollar-Potosi, Hale & Norcross and the Imperial and Empire are also all being energetically sunk.

We saw yesterday a piece of rock from the Palmer ledge which looked very well indeed. The drift is in some fifteen or twenty feet from the shaft.

Same of Feb. 2d: The contract for sinking an incline in the Bowers & Plate mine, Gold Hill, is completed. The incline is a double one, a hundred feet in length, from top to bottom, very substantially timbered throughout, and machinery is about being erected near by for hoisting ore through it.

Two compartments of the Yellow Jacket new shaft are being sunk a hundred feet deeper in order to open a fourth level.

All our mills which have had to suspend operations in the crushing line from lack of the necessary supply of ore, are taking advantage of the opportunity to clean boilers, repair machinery, etc., and put everything in the best running order, ready against the roads get good and the hauling of ore progresses again.

Same of 3d: The McMeans & Devine Gold and Silver Mining Company, encouraged by recent developments, are arranging to commence work again. This claim contains 800 feet, and is situated east of the Jefferson and west of the El Dorado tunnel. Their shaft is eighty-five feet deep, from which one drift forty feet in length has been run, and another one ten or twelve feet.

The *Eastern Slope* says some important sales of Peavine mining interests have lately transpired in New York and Boston. A New York company have purchased the Defiance, Sawyer and Occidental lodes, and the Orient Tunnel Company's mine on the Great Eastern or Jackson lode, for the aggregate sum of \$80,000—currency. The Copper King and Deposit lodes were purchased by a Boston company—represented by Mr. Fessenden, a brother of Senator Fessenden of Maine, for \$18,000—coin. An assay of Bay State ore just returned from Swansea, is as follows: Copper 55½ per cent.; silver, 74 ounces per ton; gold, one ounce per ton.

A MEERSCHAUM PIPE, said to be 300 years old, was sold the other day in Chicago at auction for \$100. It would hold about a tea-cup full of tobacco. It found its way to this country via Lola Montez, who coaxed it out of the old king of Bavaria.

CALIFORNIA mushrooms are said to excel all others in size and flavor. They are abundant near Santa Barbara, but could not be brought to San Francisco while fresh, at least by the conveyances at present available.



## Mining and Scientific Press.

W. B. EWER, SENIOR EDITOR.

O. W. M. SMITH, W. B. EWER, A. T. DEWEY.  
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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the Mining and Scientific Press in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.  
Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 11th, 1866.Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.  
Mr. S. B. Whitaker, is our authorized Travelling Agent and Solicitor from this date. Jan. 1, 1867.

## San Francisco:

Saturday Morning, Feb. 9, 1867.

## Notices to Correspondents.

I. Q. M.—We can give no better explanation than the one assigned by chemists for the failure of wood to ignite in a phosphorus flame, viz.: That the surface of the wood is instantly covered by a film of phosphoric acid, which protects it from further combustion.

A COMMUNICATION from "An Occasional Correspondent," on the cement mines about Forest Hill, in Placer county, and one from "O. J.," of Magalia Butte, noticing another locality in this State, where "native lead" is found, have been received, and will appear next week.

ECCENTRIC, San Francisco, says he is learning a machinist's trade, and desires to procure the best works whereby he may enlighten himself with regard to marine and locomotive engines. "Bourne's Catechism of the Steam Engine," is the best work to begin with. It may be had at almost any book store for \$3 or \$4. A large treatise on Engineering, by the same author, price about \$15, would be the best work to take up next.

PAUL PRY.—The antiquity of pre-historic man has been further established by the recent discovery at the hematite mines, in Furness, North Lancashire, England, of a human skull, which "was found at a depth of thirty-three yards, in what is called an 'old man's working.'" The peculiar conformation of the skull has been submitted to several competent authorities, and they all appear to have arrived at the conclusion that it is the skull of an Ancient Briton. An able article appeared in the last number of the North Lonsdale Magazine, written to prove that the Ancient Britons were not only "iron miners," but that they were not the ignorant, painted savages which early writers, especially Caesar, have led us to believe. The employment of scythes as an offensive weapon in the war chariots of Boadicea, would appear to establish the fact that the Britons at that early period had got beyond the Age of Bronze and into the Age of Iron.

TYRO.—Electricity, in its simplest form, has been known for more than 2,000 years. When amber is rubbed upon such bodies as fur, wool or silk, it acquires, for a short time, the property, first, of attracting light objects, such as fragments of paper and particles of bran, and afterwards of repelling them. Until about 250 years ago, amber was the only substance known by which such effects could be produced. Dr. Gilbert about that time, discovered that a number of other bodies, such as glass, sealing-wax and sulphur, might be made to excite similar phenomena. The power thus brought into action has been termed electricity, from *electron* (amber), the substance in which it was first observed. Independently of its being induced by friction, it has been found that electricity is also produced by chemical action, by vital operations, by heat, by magnetism, by compression, in fact by almost every motion that occurs upon the face of the globe. Electricity neither increases nor diminishes the weight of bodies subject to its influences, nor enlarges nor reduces their bulk. It may be excited in all substances, may be communicated from one electrified or excited body to another previously in a neutral or unexcited condition, or it may be stored up for future experiments.

The line in last week's issue, revoking S. D. W.'s commission, was inserted through a misunderstanding.

## The New Mineral (?) "Partzite."

Since the appearance in our issue of January 19th, of the communication of Mr. Arents, describing what he considers a new mineral, found in the Blind Spring mountains of Mono county, in this State, we have met with several persons who have examined this mineral, in place, at Blind Springs, and who have also met with it elsewhere (in Reese River and Arizona). The impression in each case is averse to the idea of its being a new mineral; said opinions being founded on careful analyses thereof.

A specimen from Blind Springs has been placed in our possession, a portion of which we handed to a friend for analysis. It has a green appearance, varying from greenish-yellow, in all grades, to nearly black. Separate analyses of the light and dark portions of the mineral show the following composition:

	Light Green.	Dark Green.
Gravity.....	4.95 to 5.02	5.25 to 5.30
Hardness.....	4.5 to 4.7	4.2
Antimony and Lead.....	41.0	46.5
Copper.....	11.2	14.7
Silver.....	0.3	1.3

With carbonic acid, silica, and sulphur.

The darker the ore, the larger is found the percentage of carbonic acid and sulphur; while silica increases with the lighter color, assuming more luster and becoming harder. The antimony was not parted from the lead; the proportion of the two metals are judged, proximately, at fifteen of lead and twenty-eight of antimony. This analysis, it will be seen, presents a very marked difference from that made by Mr. Arents, especially in the excess of lead and lack of silver. We very much regret that Mr. A. did not furnish us with a sample of the specimen from which he made his analysis. We presume his analysis was correct; as we understand from those who have analyzed the mineral from each of the several localities where it is found, that it is very variable in its composition.

The mineral is a silico-carbonate, and instead of being a new mineral, has probably been metamorphosed, by heat, from a sulphureted ore, with the metamorphism arrested before it had arrived at a completion; hence, the presence of a residue of sulphur, and the very variable amount of all its constituents. The progress of the action of metamorphism appears, commencing from the darkest portions of the mineral, to substitute carbonic acid instead of the sulphur; both of which diminish in quantity by the increase of silica changing color in proportion.

Compared with sulphureted ores, the argentiferous grey copper ore (fahlerz) is nearest in composition, although it is seldom that fahlerz is found containing lead.

The Blind Springs ore, we are told by those who are familiar with it, contains silver, in very variable proportions, from less than one up to thirteen per cent.; the darkest portion of the ore being the richest in that metal. The general average of lead in the ore is much greater than that given in the single analysis of Mr. Arents.

Similar ore, as we have already said, is found in Reese River (Columbia district) and in Arizona. When there is no silica in the mineral, as is the case with the Reese River ore, and some specimens from Arizona, the appearance is dull, without luster. The other constituents agree substantially with the ore from Blind Spring.

Argentiferous lead ore occurs in a similar condition in Arizona, showing a gray, horny, chondroid fracture, from a gray color to nearly black—the district being the richest in silver, and containing also more sulphur and less carbonic acid than the light-gray portions. It assumes a greenish color when copper is present. The connection of this mineral with galeua shows distinctly its transformation into the carbonate.

We are much obliged to our Mono correspondent for introducing this discussion, although we cannot but think him in error. It has brought to our general notice a valuable ore, which, whether it was entitled to

the position of a new mineral or not, is certainly well worthy of careful study and search. We understand that it has already become the object of extensive mining operations at Blind Springs, and we presume it will be found valuable for mining elsewhere. It will be well for miners, and particularly prospectors, to acquaint themselves with its appearance and value. Specimens can be seen at this office. We should be pleased to hear further from our correspondent, particularly with regard to the working and yield of the ore by mill process. Our columns are also open to any rejoinder with regard to the scientific characteristics and claims of the mineral.

## Mining in Australia.

By a very useful requirement of an Australian Act of Parliament, relating to joint stock mining companies in that province, the assets and liabilities of every company must be officially published, if we are not mistaken, as often as once in every six months. In this manner the soundness or otherwise of every company may be readily known by every stockholder (who reads the papers) without the time and trouble required in an examination of the company's books. It also operates as a pretty effectual check against mismanagement in any way.

By the returns of July last, it appears that there are 581 companies, whose aggregate indebtedness is but a little over five millions of dollars; while they have uncalled for capital to the extent of nearly fifteen millions, with an estimated value of machinery and other assets reaching \$30,000,000. These figures are certainly very satisfactory. Some of the companies hold large areas of valuable and productive freehold, entirely apart from their mining plants.

The reported yield of the United Extended Board of Hope Company, for the previous six months, is set down at \$509,270; out of which \$335,000 had been distributed as dividends. This company has taken out three and a half tons of bullion in two years, valued at \$1,807,000; out of which \$1,064,000 has been distributed as dividends. The actual subscribed capital of this company is under \$250,000.

The dividends paid by twenty-four companies during the month of August last amounted to \$219,210. The Australians, now and then have a good streak of luck. It appears that the *Nil Desperandum* cement mine, in Taradalo, was lately sold, with mill and 20-horse power engine, for \$5,000. In two months afterwards, the new proprietors struck a new lead which yielded eight ounces of gold for twenty-eight car-loads of cement. The lead was supposed to be continuous. Deep gravel and cement mines are found in Australia, the same as in California, often overlain with volcanic debris, etc. Mining prospects in Australia are decidedly in an improving way.

New Zealand still continues to keep up and increase the aggregate of its gold yield. The official reports for the year ending June 30th, 1866, gives a yield of 14,298,245; with a grand total, since the first discovery of the mines, of \$55,530,040.

CHANGE OF PROPRIETORS.—We notice that Mr. E. D. Waters, of the *Mercantile Gazette*, of this city, has associated with himself in the proprietorship of that paper J. H. Carmany, of the *Weekly Stock Circular*, and T. F. Cronise, formerly proprietor of that publication. The firm will be known as E. D. Waters & Co. The *Gazette* is one of the oldest newspaper publications on the coast, and is of indispensable value to the mercantile interest of this city.

GOAT VS. SHEEP.—It is said that the Cashmere goat is more easily kept than the sheep, that the yield of wool is much greater, that this wool is worth more than three times as much as any other, and that some parts of our country are well fitted for its raising.

## The Late Mine Explosion in Little York.

It is singular that, with even the terrible English catastrophes before them, the details of which we have scarcely yet finished reading, and by which nearly 600 lives have been lost, miners will still neglect the most ordinary precautions to guard against such accidents as gas explosions in mines. The Nevada Transcript has informed us of an explosion which occurred in Curran &amp; Buckman's mine, in Little York, on the 24th ultimo. It appears that the workmen had opened into some old works a day or two before, when a slight explosion took place. On the 24th three men went into the tunnel, each carrying a candle, (1) one of whom was about 100 feet in advance of his companions, near where, when he had arrived at a certain point, a slight explosion took place, when, in an instant, they were all three enveloped in flames! The Transcript is informed that there appeared to be two currents of gas, and that the flame followed the lower one and returned toward the two men by the upper one. It burned very much like alcohol, and "roared like thunder." The man farthest in was considerably burned about the face and hands, and the others had their hair and beard singed, but neither of the men were seriously injured.

The phenomena of the peculiar action of the flame or explosion may be explained in the following manner: There were, as is generally the case in all tunnels, two currents of air—an upper and a lower one. Whenever any of the lighter or inflammable gases are allowed to reach the atmosphere, they are immediately taken up and carried along by air currents, if any exist. The gas appears to have a disposition to concentrate in the center or strongest portion of the current. In the above case the comparative quiet atmosphere in the center of the tunnel did not contain enough gas to become explosive; but formed a medium through which the fire could not pass from one current to the other. Hence, the flame was confined to a narrow flow of gas, along the center of each current, passing from the candle which lighted it by the lower or heavier current to the end of the tunnel, and back again by the upper or lighter and outward current to the mouth of the same.

A phenomenon similar to the above occurred at the time of the explosion in the Masonic Temple, in this city, about two years ago. The man who witnessed it, stated that the fire appeared to move from his candle, as if a train had been set from the place where he stood in a direct line across the room; it no doubt followed a current of air, into which it had been drawn from the leak, and by which it was being conveyed out of the building through a window opening near the sidewalk.

Gas, when mixed in small quantity, only, with atmospheric air, will burn but slowly, as above described, "like alcohol." When mixed in its proper proportion for burning, it will explode with the suddenness of gunpowder, and with great violence, producing such an amount of carbonic acid gas as to render the atmosphere, if the explosion has occurred in a confined place, impossible for respiration.

Where miners have reason to fear the presence of explosive gas, as in the above case, great caution should be employed in entering a tunnel. Had the ventilation of the tunnel in the above case been such as not to have afforded a very free egress for the gas, it must have accumulated during their two days' absence in such quantities as to have thrown out, by its explosion, all three of the men who entered, as if discharged from a cannon's mouth.

THE EMPIRE MILL AND MINING Co., of Gold Hill, Nevada, has declared a dividend of fifteen dollars per share, payable on the 9th inst. This company has paid two dividends since the first of January last, which aggregate \$30,000.



## Beets and Beet Sugar.

Mr. Carl Spreckles, the projector of the Bay Sugar Refinery in this city, has just returned from Germany, where he has been "taking notes" with reference to the introduction of sugar making from beets. He intends to erect an establishment for the purpose as soon as he is assured of a sufficient constant supply of beets to keep it in operation.

From figures recently noted, giving the amount of cane sugar annually used on this coast, the duty paid upon it, and the price at which it is wholesaled, as also the amount of sugar to be made from an acre of beets, and the extraordinary yield that those roots make in California, we are forced to the conclusion that the crop would be a most profitable one for our farmers here. It is said that nearly 20,000 tons of sugar was brought into San Francisco during the year 1866. The wholesale price was, upon the average, about nine cents per pound. The duty is from three to five cents per pound. Now, an acre of land will yield in France and in some of our Western States where this root has been cultivated, about ten tons of beets, which will make say one thousand pounds of sugar. But it is said that in the Sacramento valley as high as fifty tons to the acre has been raised! Making all allowances, we think one could safely reckon upon a clear profit of one hundred dollars to the acre. The market will not be easily glutted, for this sugar would soon supplant the imported in our market; for it can be sold, with a profit, at a cost scarcely greater than the duty alone which is paid upon the latter.

The enormous size which our California beets attain, is not, it is said, at the expense of saccharine richness, although it might be so supposed. There is one point, however, on which we would like more precise information. This great size is, we are told, reached especially in soils abounding in alkaline constituents. Now, it is stated that in Europe those soils are avoided by beet growers, for the reason that the molasses from the beets raised upon them, although abundant in quantity, will not crystallize, and is, therefore, unfit for sugar. Even if this be true, there is still a large margin in favor of California over European growers, in soil that is suited for the purpose, in the single fact that we have a climate free from moisture in the summer months. A dry atmosphere and warm sun is peculiarly favorable to the retaining of the saccharine matters by the roots.

Machinery for the manufacture of beet sugar is exempted from taxation by Congressional act. Moreover, the California Legislature passed an act in 1862, offering a premium of \$500 for the first one hundred bags of beet sugar, each containing one hundred pounds; adding another \$150 for the same produced the next year, and \$100 for the same produced the third year.

The labor involved in the culture of this crop is light, and the cost of seed trifling. The experiment is, in our opinion, well worth trying. Mr. Spreckles' manufactory will probably be ready by the time the crop is gathered.

**CORNISH ROLLERS FOR CRUSHING QUARTZ.** The great defect in these rollers has been, that they would wear concave in the middle of their surfaces, so that they could no longer be set up to grind to the required fineness. An improvement has been recently made, however, says the *Gas Light Journal*, which effectually does away with this objection. It simply consists in dividing each roller in the middle, making, in fact, two of each. When worn down on the inner edge, these can easily be separated and reversed; the edges which were before the outer are now the inner, and the roller is convex in the center. When worn down as before, they can be again reversed; and thus be made to last indefinitely.

## A Gold Dredging Machine.

At a late meeting of the Polytechnic Association of the American Institute of New York, Mr. Johnson submitted the model of a new dredging machine, about to be employed on the Chattahoochee river, Georgia, for the purpose of raising the sands of that river preparatory to washing them for gold. The machine, consisting simply of a flexible tube, six inches, more or less, in diameter, according to the service expected, is thrown over the side of a boat or vessel. The end of this tube is so connected as to rest with its lower and open face upon the sand to be raised; the other end is connected with a centrifugal pump on board the vessel. He claims that with this he can raise ten tons per minute of any loose sand or sediment. Even stones, to the size of small cobblestones, would pass freely through the pump with the finer and fluid mass.

Another member, Mr. Lee, remarked that he had successfully employed a similar apparatus for removing the sand around sunken wrecks, for widening the channels of rivers, bays, etc. The plan might be used with good success for dredging harbors, docks, etc. He had used it in seventy feet depth of water.

If the above remarks are warranted, we see no reason why such a machine might not take the place of the ordinary dredging machine for harbors, etc. The principle on which it is constructed would seem to admit of a more economical elevation of dock mud than those on which that substance is now brought to the surface.

Moreover, when gold is contained in the loose sands of river-beds, as it often is, and on the sea beach, as at Gold Bluff, it might be worked by hand or horse-power. The expense of such an apparatus need not be heavy.

In answer to some objections, with regard to the utility of such a machine for gold working, suggested by a member, Mr. Johnson, who introduced the model to the attention of the association, remarked that he was sanguine of the success of the enterprise for that work in certain localities, as, for instance, in the Chattahoochee river. He had worked the sands of that river for gold, and found the precious metal in the loose as well as the closely packed or dead sand. Black sand was also found mingled with the former, as well as with the latter, and wherever it was found in that river it yielded fine gold.

**ELEPHANT REMAINS FROM THE NORTH WEST COAST.**—Professor Blake has shown us some very fine specimens of elephants' grinders, presented to him by Col. Bulkley, of the American and Russian Telegraph Survey. One of these grinders is in a very remarkably fine state of preservation, showing the enamel somewhat mineralized, with a portion of the roots attached; the other has evidently been a long time subjected to the action of water, probably on the sea shore, by which it has become much abraded. The former was found at the mouth of the Yukon river; the latter is from St. Paul's Island, near the middle of the Behrings or Kamtschatka sea. The fossil remains of elephants, of a race quite different from any now existing, are very numerous along the northwest coast of America, and other lands near and within the Northern seas. These remains prove that the elephant was once quite numerous in those high latitudes, as well as in the lower latitudes of Southern Europe and Central North America. Such remains are of frequent occurrence in the middle portions of California. One of the most interesting circumstances connected with the specimens before us, is the fact, as stated above, that one of them was found on St. Paul's Island, which must, consequently, have once been connected with the main land, although it is now separated from it by an expanse of water some 300 miles wide. The continents of Asia and America were, doubtless, once united at Behring's Straits, and furnished the pathway by which animals were distributed over this continent from the great center of creation in Southeastern Asia.

**SMALL PORTABLE ENGINES**, for local work, are gradually coming into use for various purposes. The wonder is that our people have not sooner learned their value, and introduced them in greater numbers for more varied purposes. We now employ them, either as an integral part of the engine, or entirely separate, for pile-driving, for loading and unloading ships, for fire engines, for threshing-machines, for pumping, etc. The latest employment of that kind we have noticed, in this city, is that of raising material in house building. We perceive that the hod-carrier and the common laborer find no employment at the large warehouse now in process of erection at the corner of Sansome and Bush streets. The contractors for that work have stationed a small, portable engine inside of the building, which raises all the brick, stone, mortar, timber, and other material, which is usually elevated by slow, tedious and expensive hand labor.

In London, certainly, and possibly in some of the cities on the continent, such engines are very generally employed. So advantageous have they been found in London, that there are parties there who make a business of keeping such engines, of various capacities to suit different kinds of work, to lease to small contractors who cannot make it profitable to own their own machinery of this description. The larger contractors, of course, own their own engines. There is scarcely a brick house put up in the city where such an engine could not be profitably employed. Their use for unloading ships is one of the most important improvements of this fast age. To-day a 3,000 ton ship can be discharged and loaded as soon as a 300 ton schooner could have been handled fifteen years ago, or before the introduction of the donkey engine. Four times the amount of business can be done in a given space of water front, by the use of such appliances, as could be got through with by the old method of hand work, or even the later and still practiced horse power. Give the donkey engine a fair show, and it will reduce the space required for our water front two-thirds. Let water front speculators, who are huying up lots two or three miles south of Rincon Point, think of this and make a note of it.

**CALIFORNIA GRAPE SLIPS FOR THE EAST.** Horace D. Dunn, Esq., California correspondent of the National Agricultural Bureau at Washington, will send to that Department by the steamer of to-day a large variety of California grape slips, to be propagated in the experimental gardens at Washington for cultivation in the Southern States. Among them are fifty slips of the Fifer Zagos, a raisin grape, and twenty-five each of the Black Prince, Verdelho, Muscat of Alexandria, Golden Forest, Red Tramina, and the White Pinneaux. These vines are all from B. N. Bughey's Natoma Vineyard.

A shipment of California potatoes, of the best seed variety, will also go East by the steamer of to-day. These potatoes are shipped for seed, and with the view of improving this esculent in the Atlantic States. A few of these potatoes were sent thither some ten years ago, by way of experiment. The result has been so satisfactory that quite large shipments are now going forward for that purpose. Thus California comes to the rescue in a new field—to improve the worn out vegetables of the Eastern States.

**THE MECHANICS' INSTITUTE** had a full meeting on Thursday evening. The report of the Secretary for January showed a balance in the treasury of \$1,178.25. W. McKibben, P. M. Randall, S. D. Piper, Mr. Hincley, and H. F. Williams, were elected a committee of five to nominate officers for the next term. They will report at the adjourned meeting, two weeks hence. Mr. Patten, the architect of the new Institute building, submitted a communication, explaining his failure to report. Mr. O'Connor gave notice of a resolution to be offered at the next meeting, requiring the nominees to pledge themselves to the adoption of the eight-hour law.

Mr. E. H. Hall, who has been spending some time in this city, and who has visited various other parts of the Pacific coast, collecting material for a forthcoming "Guide Book for the Great West," takes his leave to-day, overland, via Virginia City, Great Salt Lake, etc. The work will be published by the house of D. Appleton & Co., of New York, and, in addition to the usual matter of a guide book, will contain a large amount of valuable statistical matter, a digest of the resources of the various States and Territories which will be comprised within its scope, etc. The whole will be carefully compiled, chiefly from personal observations by Mr. Hall, and will doubtless prove a valuable addition to the published facts with regard to the resources of the Pacific coast and the "Great West" in general.

Hops will be largely raised this season in Los Angeles county.

## City Amusements.

**METROPOLITAN.**—On Monday night the "Sheep's Foot" was performed for the first time by the Martinetti. Miss Emma Howson as Don Guzman, Miss Clella Howson as Leonora, and Willie Edwain as Nigodomo, are extremely good. Little Ignacio makes a beautiful Cupid, and presents himself in the most unexpected places. There is some fine dancing in the first act. The gymnastic performances are also very good. The machinery works smoothly now, and the piece will probably have a long run.

**OFFER HOUSE.**—"Griffith Gaunt" was played till Wednesday. Thursday night "The Lady of Lyons" was performed, with Mrs. Sophie Edwin as Pauline, and Mr. McCullough as Claude. Mrs. Edwin's reappearance was greeted by a full house. Miss Alice Kinsbury commences a second engagement this week, playing "Fanchon." Next week, "The Long Strike."

**PLATT'S HALL.**—The San Francisco Musical Fund Society gave their third annual Concert and Ball on Thursday evening. It was well attended and gave good satisfaction.

**POLYTECHNIC HALL.**—A museum of curiosities, Punch and Judy and a Flying Machine, at 312 Montgomery street.

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**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes. It has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

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**Soft Steel Wire Rope**—For Derrick Laid Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

**Galvanized or Ungalvanized Round Wire Ropes**—for Ships' Rigging, Derrick Gears, Ferry Ropes, and all standing purposes.

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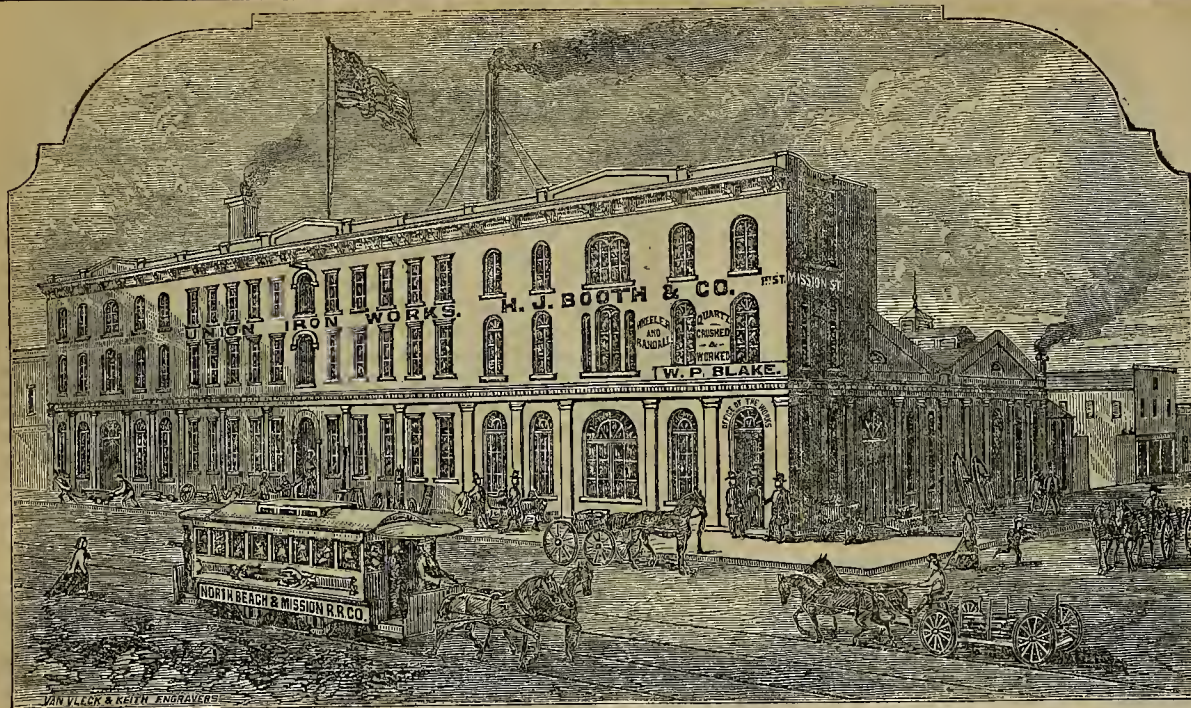
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2 59	1 34	5 100	$\frac{3}{8}$	7	2,300
2 88	2 55	6 130	$\frac{3}{4}$	341	11 3,700
3 170	2 91	8 236	$\frac{3}{4}$	533	19 6,300

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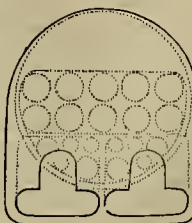
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We are constantly hearing of the successful  
application of steam carriages to common  
roads, and new enterprises in that direction.  
The latest case of the latter is the contem-  
plated establishment of a line of such car-  
riages on the road between Marsilles and  
Aubergne, France. The distance between  
the two places is ten miles; there will be  
three departures daily, and the price of a  
ticket out and back will be twenty cents.

It may not be generally known that active  
steps are being taken in this city to try the  
experiment of steam carriages on common  
roads, in some of our interior or transmon-  
tane valleys. The late successful results in  
Europe, we trust, will afford such encour-  
agement as to warrant a repetition of the  
experiment on this coast at an early day.

**OIL IN COLUSA.**—The Marysville Appeal  
of February 1st, says the prospects of Mar-  
cuse & Co. are very flattering. "At a depth  
of 373 feet the well discharges daily from  
500 to 600 barrels of water, which has  
changed lately from a salty, bitter taste, to  
a pure soda, sparkling and colorless. This  
well is also so strongly charged with gas as  
to clean itself of all chips, rendering sand  
pumps unnecessary."

**CASTOR BEAN.**—W. P. Weeks, of Mazat-  
lan, says that the castor bean grows wild in  
abundance near that place, and could be  
collected in any amount, if there is a market  
here for it which will make it remunerative.

In 1850 the daily water supply of Lon-  
don was 44,383,000 gallons; in 1856, 80,-  
000,000; and in 1865, 108,000,000 gallons.

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tation of having built ONE HUNDRED AND SEVENTEEN  
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**THE ENGLISH NAVY.**—The most eminent English engineers are endeavoring to devise some method for the utilization of the English wooden navy. It is generally conceded that, although the wooden vessels of England have been built on the most approved plan for such ships, they are totally unfitted for the new mode of warfare, first introduced to the world during our late intestine conflict. Some advocate the propriety of cutting down the two and three deckers to the lower deck, and fitting up the hull with iron armor. The general opinion seems to be that such vessels would be suitable only for conflicts with such antagonists as the Chinese or Japanese would present; they would not stand, for an instant, against the *butting* of the modern iron *ram*; and no internal improvement can make them fit for such work. The general opinion seems to be that England has got to make up her mind that she must begin anew and build up an iron-clad navy. The expense of such a navy, at all commensurate with the mercantile interests of the country, will be enormous; but no other alternative appears to be left.

While England, owing to the perverseness of her engineers in refusing to accept the principles on which the United States have proved that iron-clads could be made serviceable, has lost nearly all she has already done in this direction; Russia, more ready to acknowledge merit, irrespective of its source, has now an effective iron-clad fleet of at least *thirty* war vessels of all descriptions. Russia, moreover, will not fail to keep the superiority she has already secured. She is now, on the ocean, more than a match for any European Government, and will, in all probability, ever remain so. Russia and America do, and ever should, hold the balance of power against all the rest of the world.

**INDIANS IN NEW MEXICO.**—A monster petition, fifty-two feet in length, containing the names of all the prominent citizens of New Mexico, has been forwarded to Washington, praying for an increase of the military force in that territory, to protect the lives and property of the inhabitants against the Indians.

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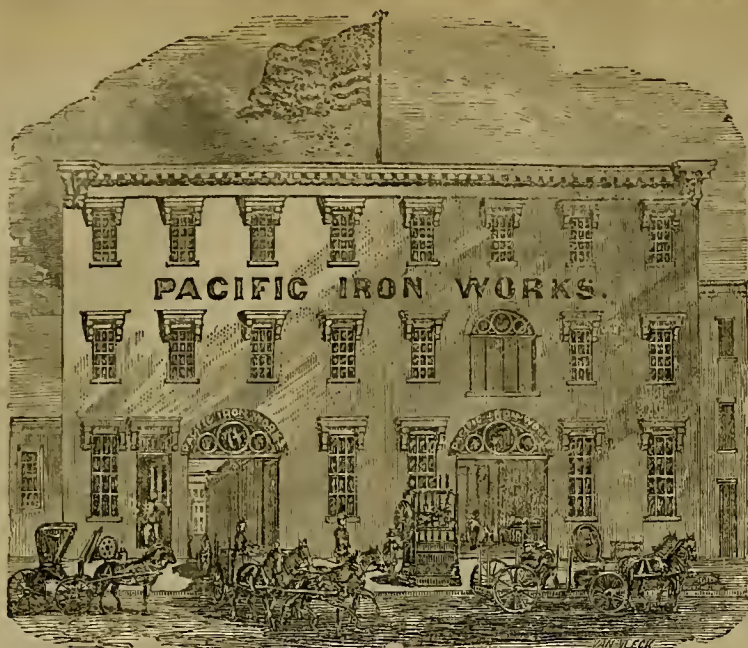
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Mail Steamship Co's office, corner of Sacramento and  
Leidesdorff streets.

## OLIVER ELDRIDGE, Agent.

COPPER IN THE COAST RANGE.—The edi-  
tor of the Nevada Gazette recently saw some  
very rich specimens of ore from the mine  
of the Lyon Copper Mining Company, near  
the town of Ashton, in the Coast Range.  
Seven hundred pounds of this ore, it is said,  
was lately smelted at the company's works,  
and yielded five hundred pounds of pure  
copper.

## Trades and Manufactures.

## WM. BARTLING.

## HENRY KIMBALL.

BARTLING & KIMBALL,  
BOOKBINDERS,  
Paper Rulers and Blank Book Manufacturers.  
505 Clay street, (southwest cor. Sansome),  
15v12-3m SAN FRANCISCO.

## JOHN DANIEL,

(SUCCESSOR TO O. GORI)

## MARBLE WORKS,

No. 421 Pine st. bet. Montgomery and Kearny, San Francisco

Monuments, Tombs, Planners' Slabs,  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
spectfully solicited. 5v8-3m

## NATHANIEL GRAY,

General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.Barstow's Metallic Burial Caskets and Cases,  
11

## THEODORE KALLENBERG,

Maker of Models for Inventors.

MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
OSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair  
ing of machinery promptly attended to.  
No. 418 Market street, San Francisco. n7-1f

## Palmer's Patent

ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.

629 Washington Street, San Francisco, Cal. 10v3-1m

## HUCKS &amp; LAMBERT,

SOLE MANUFACTURERS OF THE CELEBRATED

## H. &amp; L.

AXLE GREASE,  
Natoma Street and North Beach,  
2v13-3m SAN FRANCISCO.

## LEATHER HOSE AND BELTING,

ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

## M. M. COOK &amp; SON,

No. 801 Battery street,  
SAN FRANCISCO. 15v13-3mSterrett & Cubery  
PRINTERS,  
533 Clay street,  
—BELOW—  
MONTGOMERY STREET.  
19v13-3mWM. A. KOLLMYER,  
LOOKING-GLASS  
—AND—  
PICTURE FRAME MAKER,No. 49 Third street,  
Near corner of Mission.  
19v12-3mMcNALLY & HAWKINS,  
Plumbers and Gas-Fitters,No. 645 Market street,  
Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
SAN FRANCISCO.BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
19v13-2q

## City College Laboratories,

Southeast Cor. Stockton and Geary sts.

Practical and Analytical Chemistry  
and Metallurgy.THOMAS PRICE,  
Professor of Chemistry,  
(Formerly of the Normal College, Swansea.)WILL GIVE PRACTICAL INSTRUCTIONS IN QUALI-  
tative and Quantitative Analysis and Assaying. The  
course qualifies students for the application of Chemistry  
to METALLURGY, MANUFACTURING ARTS, and MINING  
PURPOSES.PHARMACEUTICAL and TECHNICAL CHEMISTRY,  
such as is required by Medical and Pharmaceutical Stu-  
dents, will be taught to such students as may require it.

Course of General Chemistry.

Evening Lectures will be delivered every Tuesday, at  
half-past seven o'clock, P. M., in the Philosophical Hall of  
the College, without extra charge to the students in the In-  
stitution.On and after the 14th of February, the Laboratories will  
be open every day, except Sundays, from 8 A. M. to 5 P. M.  
For further particulars, address

## REV. P. V. VEEDER

Principal of the City College.  
Or at 406 California Street.  
6v12c0v1f



## New Mining Advertisements.

**Blue Ledge Gold and Silver Quartz Mining Company,** Kelsey District, El Dorado County, California. Office, No. 5 Government House, corner of Washington and Sansome streets, San Francisco.

Notice is hereby, that a meeting of the stockholders of the above named Company, will be held on the twenty-third day of February, 1887, at 10 o'clock P. M. of that day, for the purpose of altering the By-Laws of the Company, and transacting such other business as may come before said meeting.

J. M. BUFFINGTON, Secretary.  
San Francisco, February 4, 1887. feb9

**Diamond Copper Mining Company,** Location: Bockland District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of February, 1887, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, Room No. 33 Montgomery Block, San Francisco, or to R. B. RANDALL, the Company's Superintendent, at Crescent City, Del Norte County, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, Room No. 33 Montgomery Block, corner of Montgomery and Washington streets, San Francisco, Cal. feb9

**George Washington Gold and Silver Mining Company,** Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 17.  
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of February, 1887, an assessment of three dollars and fifty cents (\$3.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 333 Montgomery street, San Francisco. feb9

**Ratcliffe Gold and Silver Mining Company,** Brown's Valley, Yuba County, California.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the fifth day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Arcey, Walter W.	463	25	\$25 00
Brogan, P. J.	466	25	25 00
Kleinhaus, T. F.	568	20	20 00
Laidley, James	569	60	60 00
Laidley, James	564	133	133 00
Murdoch, A. H.	663	25	25 00
O'Brien, Thomas	663	25	25 00
Bice, J. M.	488	25	25 00
Thompson, I. D.	555	25	25 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of J. Middleton & Son, 404 Montgomery street, San Francisco, Cal., on Monday, the twenty-fifth day of February, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOISE, Secretary.  
Office, 318 California street, Up-stairs, San Francisco. feb9

**Tuolumne Mountain Gold and Silver Mining Company,** Old Buchanan Ledge, Tuolumne County, State of California.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the third day of January, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Alexander Noeklin	5	137 1/2	\$137 50
Alexander Noeklin	5	87 1/2	87 50
Alexander Noeklin	5	2	2 00
Alexander Welsler	104	2	2 00
Joseph Kerston	109	5	5 00
Joseph Kerston	120	5	5 00
Joseph Kerston	127	15	15 00
Joseph Kerston	131	15	15 00
A M Chappelle	128	15	15 00
A B Chappelle	126	1	1 00
A B Chappelle	119	1	1 00
H H Byrne	10	100	100 00
H H Byrne	63	32 1/2	32 50
John Herpezo	45	25	25 00
John Anthes	64	6	6 00
L P Freelon	133	163	163 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on the twenty-sixth day of February, 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. F. VEBDENAL, Secretary.  
Office, Room No. 22 Court Block, 635 Clay street (up-stairs), San Francisco California. feb9

## Mining Notices--Continued.

**Arizona Consolidated Mining Company,** Eureka District, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1887, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the office of the Company, No. 611 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. W. BUNNELL, Secretary.  
Office, No. 611 Clay street, San Francisco. feb9

**Delays are Dangerous.**—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding the three months delay requisite in transacting business through Eastern agencies.

**Big Blue Lead Gold and Silver Mining Company,** Cove District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of January, 1887, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable January twenty-sixth, 1887, in United States gold and silver coin, to the Secretary, M. G. ELMORE, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twentieth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. feb9

**Cherokee Flat Blue Gravel Mining Company,** Cherokee Flat, near Oreville, Butte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of January, 1887, an assessment of five (\$5) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the Company's office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. DE RENALHAG, Secretary.  
Office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, Cal. feb9

**Chilpaneca Mining Company—District of Ceres,** Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of January, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the Company's office, California street, (up stairs) San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOISE, Secretary.  
Office, 318 California street, San Francisco, Cal. feb9

**Cosima Silver Mining Company, Cosima District,** State of Sonora, Mexico.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the seventeenth day of December, 1886, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Arcey, Walter W.	463	25	\$25 00
Brogan, P. J.	466	25	25 00
Kleinhaus, T. F.	568	20	20 00
Laidley, James	569	60	60 00
Laidley, James	564	133	133 00
Murdoch, A. H.	663	25	25 00
O'Brien, Thomas	663	25	25 00
Bice, J. M.	488	25	25 00
Thompson, I. D.	555	25	25 00

And in accordance with law, and an order of the Board of Trustees, made on the seventeenth day of December, 1886, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction rooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the eleventh day of February, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, Cal. feb9

**Evoca Consolidated Copper Mining Company,** Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of January, 1887, an assessment of twenty-five cents (25) per share was levied upon the assessable capital stock of said Company, payable on the eleventh day of February, 1887, in United States gold and silver coin, to the Secretary, E. THAYER, at the office of the Company, at No. 532 Merchant street, Room No. 3, in the City and County of San Francisco, State of California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twentieth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the thirteenth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. S. CLYDE, Secretary.  
Office of Company, No. 532 Merchant street, Room No. 3, San Francisco, California. feb9

**Hope Gravel Mining Company,** Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of January, 1887, an assessment (No. 12) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable on the seventeenth day of January, 1887, in gold coin of the United States, to DAVID WILDER, Secretary, at the office of the Company, No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the twenty-third day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. feb9

**Julia Gold and Silver Mining Company, Storey** County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of January, 1887, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, 607 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. NOEL, Secretary.  
Office, 607 Washington street, San Francisco, Cal. feb9

**Postponements and Alterations.**—Secretaries are requested to give notice of postponements, or alterations which they may desire made in their advertisements at their earliest convenience. New advertisements should be sent in as early as possible.

**Illegal Supplemental Advertising.**—It would be well for Mining Companies, whose advertisements are repeatedly appearing in the Supplements of daily papers, to inquire into the legality of that class of advertising.

**Keystone Mining Company, Location of Works:** Copperopolis, Calaveras County, California.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the twenty-first day of November, 1886, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
C. H. Dunham	162	2	\$25 00
C. H. Dunham	163	3	30 00
E. H. Alley	161	3	30 00
E. H. Alley	168	5	50 00
John H. Hovey	164	5	50 00
John H. Hovey	165	5	50 00
Isaac F. Crutt, Trustee	163	5	50 00
Isaac F. Crutt, Trustee	165	5	50 00
Willard Hedges	163	100	100 00
W. H. Hedges	165	50	50 00
W. H. Hedges	165	75	75 00
F. J. Hughes	161	20	120 00
W. H. Hedges	161	10	100 00
W. J. McMorrick	161	25	250 00
W. J. McMorrick	161	25	250 00
E. H. Jones	162	8	80 00
E. H. Jones	162	10	100 00
E. H. Jones	162	10	100 00
E. H. Jones	162	10	100 00
Wm. Babson	167	33	330 00
Jacob Hall	147	20	200 00
Jacob Hall	147	33	330 00
E. W. Gilmore	165	50	500 00
E. W. Gilmore	165	50	500 00
E. W. Gilmore	165	25	250 00
E. W. Gilmore	165	25	250 00
E. W. Gilmore	165	40	400 00
E. W. Gilmore	165	12	120 00
E. W. Gilmore	165	25	250 00
Isabella Howland	162	10	100 00
Isabella Howland	162	10	100 00
A. Gilmore	164	5	50 00
A. Gilmore	164	5	50 00
Mrs. Adella Tryon	170	25	250 00
H. B. Wright	174	8	80 00
E. S. Pillsbury	203	20	200 00
C. J. Morrill	151	15	150 00
C. J. Morrill	150	25	250 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-first day of November, 1886, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, 404 Montgomery street, San Francisco, Cal., on Monday, the eleventh day of February, 1887, at the hour of 1 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

O. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. feb9

**Lady Bell Copper Mining Company, Low** District Mining District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of January, 1887, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to J. K. Johnson, President City.

Any stock upon which said assessment shall remain unpaid on the fourteenth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fourth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

C. HEYWOOD, Secretary.  
Office, 311 Market street, San Francisco, Cal. feb9

**Postponement.**—The day for deeming stock delinquent on the above assessment is hereby postponed until Thursday, the sixth day of February, 1887, and the sale thereof until Monday, the 13th day of March, 1887. By order of the Board of Trustees.

C. HEYWOOD, Secretary.

**Noupparel Gold Mining Company, Location of** Works: Tuolumne County, California.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the twenty-sixth day of December, 1886, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. S. Gould	31	5	\$7 50
S. A. Eldridge	5	10	15 00
John P. Raymond	10	10	15 00
John P. Raymond	11	10	15 00
John P. Raymond	12	30	45 00
John P. Raymond	13	10	15 00
John P. Raymond	14	42	63 00
Wm. P. Raymond	15	30	45 00
Wm. P. Raymond	16	47	70 50
W. B. Agard	17	30	45 00
W. B. Agard	18	20	30 00
Thomas Foulkes	19	10	15 00
Thomas A. Hughes	20	10	15 00
Thomas A. Hughes	21	10	15 00
B. Lufolo	22	25	37 50
B. Lufolo	23	25	37 50
B. Lufolo	24	25	37 50
John McHugh	25	30	45 00
John McHugh	26	15	22 50
Emil Grisar	27	20	30 00
Emil Grisar	28	30	45 00
Joseph J. DuPrat	29	60	90 00
Joseph J. DuPrat	30	75	112 50
James M. W. Apple	31	100	150 00
Geo. W. Beaver	32	10	15 00
E. L. Smith	33	10	15 00
Chas. F. Lott, Estate	34	30	45 00
E. H. Hickey	35	20	30 00
E. Doyle	36	50	75 00
Henry Voorman	37	105	157 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-sixth day of December 1886, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Cobb & Sinton, No. 407 California street, San Francisco, California, on the eighteenth day of February, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. A. ELDRIDGE, Secretary.  
Office, 423 Washington street, (Room No. 9) San Francisco, California. feb9

**North San Francisco Homestead and Railroad** Association, at the City and County of San Francisco, Cal.

Notice is hereby given, that at a regular monthly meeting of the Board of Trustees of said Company, held on the eleventh day of January, 1887, an assessment of twelve dollars and fifty cents (\$12.50) per share was levied upon the capital stock of said Company, payable January twelfth, 1887, in United States gold coin, to the Secretary, at the office of the Association, No. 418 California street, Room No. 5, third floor, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twelfth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. W. KINNEY, Secretary.  
Office, No. 418 California street, Room No. 5, third floor. feb9

**American and Foreign Patents.**—Letters Patent for Inventors can be secured in the United States and foreign countries through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## NOTICE.

The following resolution was passed at the meeting of the Board of Trustees of the Ophir Silver Mining Company, held this day:

Resolved, That the resolution of this Board, passed at the meeting held December twenty-fourth, 1886, providing for the levying of an assessment of five dollars per share on the capital stock of this Company, on account of informality, be and the same hereby be rescinded.

ROBERT GEORGE, Secretary.  
Office Ophir Silver Mining Company, San Francisco, January 10th, 1887.

**Assessment Notice.**

**Ophir Silver Mining Company—Location of** Works, Virginia District, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on this tenth (10th) day of January, 1887, an assessment of five (\$5) dollars per share was levied upon each and every share of the capital stock of this Company, payable in United States gold coin, on the fourteenth instant, to the Secretary of this Company, at the office of the Company, Nos. 4 and 5 Court Block, corner of Montgomery and Jackson streets, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourteenth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold at public auction on the first day of March, 1887, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

Office Ophir Silver Mining Company, Nos. 4 and 5 Court Block, corner of Montgomery and Jackson streets, San Francisco, California.

ROBERT GEORGE, Secretary.  
January 10th, 1887. feb9

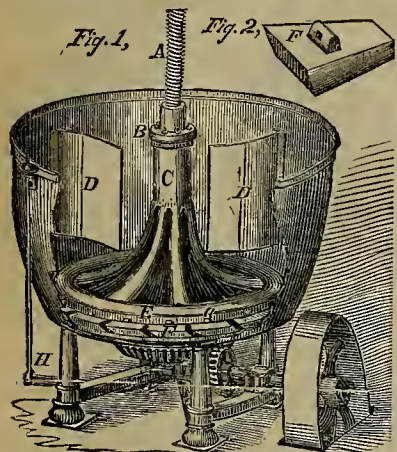
**San Marcel Silver Mining Company, Location of** Works: San Marcel, District of Hermosillo, State of Sonora, Mexico.

Notice is hereby given that at a meeting of the



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

## V. CUSHING, Agent

— FOR THE —

## Purchase & Shipping of Machinery OF ALL KINDS.

Especial attention given to Quartz Mill Machinery and Findings, and Miners' Material of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to—

Governor F. F. Low; C. T. Meader, Stockton; Jacob Underhill & Co., San Francisco; J. W. Stowe, Russell & Erwin Manufacturing Company; Office, No. 120 Front street, San Francisco.

## HUNTER'S IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor, 22+13-3m San Francisco.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and into the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the PACIFIC FOUNDRY, 1v1 San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

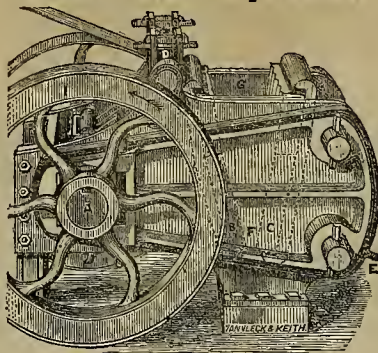
For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco.

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.** The attention of all interested in mining is respectfully called to this Improved Machine for Crushing, Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1.—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$3000

No. 2.—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour—price, \$500

No. 3.—Or 20-inch Crusher, will in a similar manner crush from seven to eight tons per hour—price, \$1200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county:

RAWHIDE RANCH, Tuolumne Co., Sept. 28, 1866. JAMES BRODIE, Esq., San Francisco.—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be raised to the sum of \$10 per Barrel.

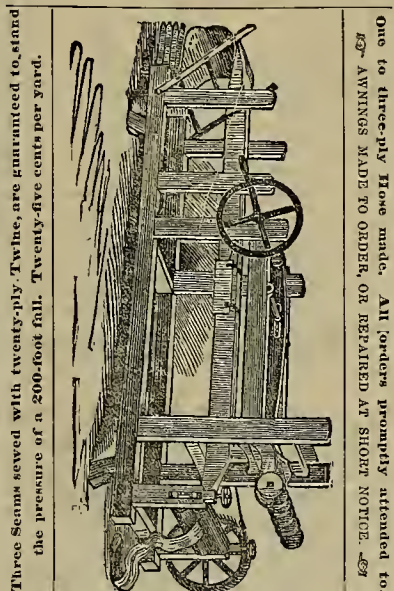
A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California, and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866.

BRODIE & RADCLIFFE, Express Building, 402 Montgomery street, San Francisco.

## PATENT HYDRAULIC HOSE SEWING By S. HOWARD,



No. 326 DAVIS STREET, San Francisco.

22+13-3m

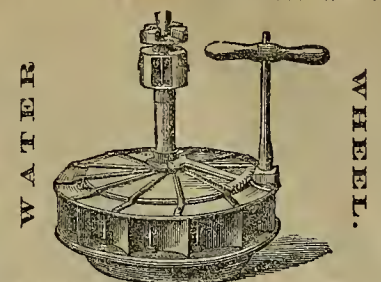
## STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shores and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near East.

Ores, in lots not exceeding 2,000 pounds, tested by 2v13 O. W. STRONG, Assayer.

## LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REPRESENTATIVES: E. Stockton, Folsom; O. Simmons, Oakland; Mill at Clear Lake; Morgan Coville, Lexington; Santa Clara County; J. Y. McMillan, Lexington; Santa Clara County.

Send for Circular, to KNAPP & GRANT, Agents for California.

26v13-1yq 310 Washington street, San Francisco

## Hunt's California Pump

HAS all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years. Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Power, Pumping Frames for Irrigating, Saw Frames, Sweep Horse Power, and Frames, all in one frame, the horse to travel around the frame.

PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3.—3-inch cylinder, 6-inch stroke—\$30 00  
No. 4.—3½-inch cylinder, 6-inch stroke—35 00  
No. 5.—4-inch cylinder, 6-inch stroke—45 00  
No. 6.—5-inch cylinder, 8-inch stroke—60 00  
No. 7.—6-inch cylinder, 12-inch stroke—80 00

A liberal discount made to the Trade. For further particulars, send for Circular.

E. O. HUNT, 21v13t 28 Second and 110 Jessie streets, San Francisco.

## BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

## The Mechanics' Institute.

Patented December, 1866.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace also feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALENBERG, 19v12 416 Market street, San Francisco.

J. MARSHALL W. WYLLIE.

## GLASGOW IRON AND METAL IMPORTING CO.,

No. 27 Fremont street,

SAN FRANCISCO.

Beg to inform purchasers that they have just received a large stock of Glasgow and Staffordshire best refined Bar Iron, Boiler Plate, Anvils, Cast Steel, Boiler Tubes, Gas and Water Pipes, GAS FIXTURES, etc. They offer the same for cash, on liberal terms, at wholesale and retail. The Company have superior facilities for supplying the constant demands of the market.

Country Orders punctually attended to. 19v13-q

## To Quartz Miners and Others.

NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for. 1v143m JAMES HITCHENS.

## Gould & Curry S. M. Co.—1866.

This being a representative of the Nevada silver mines, we select certain of the estimates recorded in its report, which we know will be of interest to all engaged in vein mining.

The amount of ore extracted during the year was, in round numbers, sixty-two thousand five hundred tons. Of this, about forty thousand tons was worked at the company's own mill, and the balance at custom mills in the vicinity. All of this was what is denominated "third class ore." The value, reckoning premium and discount on bars, and including amount received for ore sold, was \$1,676,505.38. The expenses of mining, milling, assaying, reducing, etc., amounted to \$1,343,183.74. Dividends to the amount of \$252,000 were declared. The average cost per ton of ore crushed, was \$12.26; of ore amalgamated, \$13.77—the difference being loss in slimes now contained in the reservoirs, to the amount of 3,500 tons, and which, worked, would yield, according to estimate—\$12.50 per ton—some \$44,000.

About \$340,000 was paid for mine labor, and \$163,000 for materials; of which latter, \$11,000 was for candles. For mill labor and hauling, nearly \$200,000, and for materials (freight included) more than \$360,000, of which \$208,000 was for the single item of fuel, \$41,000 for quicksilver, \$18,000 for sulphate of copper, and nearly \$9,000 for salt.

The average yield per ton of all ores reduced, was \$28.47. That which was reduced at the company's own mill yielded \$29, while that reduced at custom mills yielded only some \$26, on the average.

At the mine, the cost of the ore, per ton, is estimated at \$7.86. Of this amount, it is reckoned that \$3.10 was paid for extracting; \$2.11 for prospecting and dead work; \$1.82 for accessory work; 62 cents for improvements; and 21 cents on account of salaries of officials.

The average assay per ton was \$43.95; the average yield, \$33.02.

The amount above given as paid in dividends, is equal to 10½ per cent. on the capital stock.

The total amount of taxes paid by the company was \$33,000, of which \$10,000 was the United States tax on bullion.

The company have leased the boarding house formerly kept under their direction, and sold the stores on hand.

We give the following extract from the Report of the Superintendent:

"By means of 'blanket washings' we have saved, from concentrated tailings and in quicksilver regained, upwards of \$15,000. This mode of concentrating pan tailings is very imperfect; but owing to the situation of the mill, no better one could be adopted. This difficulty is now overcome by the erection of a small mill near the lower reservoir, which will furnish the power to drive any concentrating machines, and which is favorably situated to receive the tailings from the pans of the large mill. The object of erecting this so-called 'Reservoir Mill,' was to experiment upon the pan tailings, and to ascertain how to save a portion of the silver and gold that is lost in our present method of reduction. This loss amounts 25 or 30 per cent. of the assay value of the ore, and for each ton of ore worked, there is a loss of at least one pound of quicksilver, more or less charged with amalgam. Experiments have proven that a saving can be effected. The reservoir mill consists of fourteen flat-bottomed pans, with gearing, bought at a price scarcely exceeding that of old iron, and of an engine, boiler and shed previously in the possession of the company. As the tailings are finely crushed, no stamps were required. It is proposed to cover the cost of building this mill by 'custom work' on concentrated tailings gathered by various parties along the six-mile cañon. Part of the mill, however, will be constantly at work upon our own pan tailings, of which a large amount has been caught in a reservoir."

The Superintendent further says that a saving of \$3,000 per month will be effected in the diminished quantity of wood which will henceforward be used, now that the imperfect valves of the engine have been replaced by new ones.



The farmers in the Russian River region, in Sonoma county, are planting hemp. A remarkably fine article is said to be produced there. Two hundred dollars per ton is offered for an unlimited quantity of such quality. Great interest is felt among certain classes in the Atlantic States, at the recent discovery, in the Humboldt Valley, of a new textile resembling hemp; but which, it is said, is not a genuine hemp, although it has a stronger and finer fiber, and a longer staple; the stalk yields more, and can be stripped and prepared without previous manipulation. If this is true, says an Eastern paper, the plant is an acquisition equal in value to the cotton plant.

**CUSTOM MILLS IN EL DORADO.**—We clip the following from an editorial in the Placerville Courier of January 26th:

What the quartz interest now needs more than any other one thing, is a few custom mills, located at the more prominent mining centers of the county, of sufficient capacity, furnished with all the most approved appliances for saving gold from various qualities of rock, and under the management of capable men, in whose honesty the miner can place confidence.

**SINGULAR EXPLOSION.**—Samuel Cox, of Minnesota, undertook to slack some lime in a kerosene barrel in his cellar. After adding water, he commenced stirring it with a stick. Happening to bring a lighted candle in contact with the gas arising from it, an explosion took place, which threw him to a distance of ten feet, tore a hole four by eight feet through the floor, and was heard a quarter of a mile off.

**COTTON.**—The cotton crop of Egypt, for the past year, is said to have been valued at one hundred millions of dollars.

**MELLVILLE C. KEITH, M. D.**  
Homeopathic Physician,  
No. 655 Howard Street, between Second and Third,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and CHRONIC DISEASES. Consultation free.  
15v15 6m

**Job Printing Press for Sale—\$250.**

A Largest Size (half medium) RUGGLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to  
DEWEY & CO.,  
Mining and Scientific Press Office.

**WE ARE NOW OFFERING  
OUR IMMENSE STOCK  
—OF—  
Fine Custom Made Clothing**

**Gents' Furnishing Goods  
AT PRICES THAT DEFY COMPETITION.**  
Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**  
BOTH OF MATERIAL AND FINISH.

A Large Assortment of  
**Trunks, Valises, Carpet Bags, Blankets, Etc.,**  
at EXTREMELY LOW PRICES.  
**J. R. MEAD & CO.,**  
8v10 Cor. of Washington and Sansome streets.

**Notice to Miners,  
Well-Borers and Water Companies.**

**M. PRAG** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.  
**M. PRAG,**  
8v13-1y Stove Store, No. 125 Clay street, below Davis.

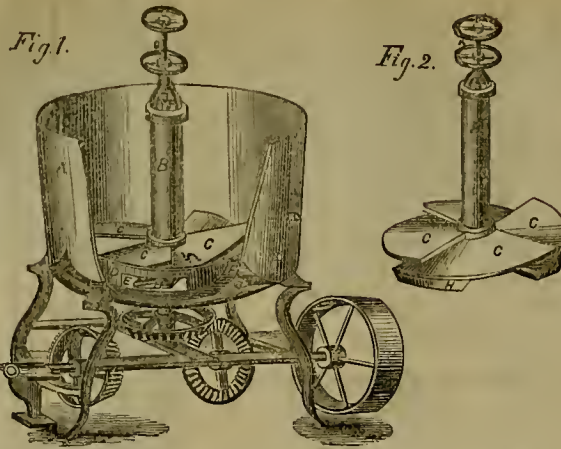
**Brown's Filtering Heater!**  
FOR PREVENTING INCrustation IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler—repairs alone.  
One is in operation at the San Francisco Foundry. Prompt street, where Rights can be procured, or all needed information, on application, in person or by letter, to  
5v14-1y AUSTIN A. WELLS, Agent.

**BLAKE'S QUARTZ BREAKER!**  
**PRICES REDUCED!**

MACHINES OF ALL SIZES FOR SALE  
—BY—  
**WM. P. BLAKE,**  
Corner First and Mission streets, or Box 2,077  
8v13f SAN FRANCISCO.

## Gaston's Screw Grinder and Amalgamator

—IS—  
The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

**HAYWARD, COLEMAN & CO.,**  
IMPORTERS AND REFINERS  
—OF—  
**Illuminating, Lubricating,  
—AND—  
PAINT OILS!**

CONSISTING OF  
KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
TANNERS', NEATSFOOT, BOILED AND RAW  
LINSEED, CASTOR AND CHINA NUT.

—ALSO,—  
**SPIRITS OF TURPENTINE & ALCOHOL**

NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning oil.

A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**  
An elegant and complete assortment on hand. 2v13m19  
414 Front street, San Francisco.

**PACIFIC POWDER MILL  
COMPANY'S  
BLASTING POWDER!**

MANUFACTURED  
**IN MARIN COUNTY,  
CALIFORNIA.**

FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
AGENTS,  
414 Front Street, San Francisco.  
3v14-1m

**IMPORTANT  
—TO—  
WORKERS OF GOLD & SILVER ORES.**

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on MR. WILLIAM SLOSSON, at Prof. W. P. Blake's Office, and obtain a Business Circular, just published by the WERTZ AMALGAMATION COMPANY of New York, who have secured, under the Patents of Prof. Henry Wertz, the sole and exclusive right to the use of sodium in amalgamation. Mr. Slosson is prepared to supply the licenses of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Barnard, of Columbia College, "two grains of gold may be gathered where but one was before." 12v13-2u

**TIME & LABOR SAVED  
—BY USING—**

**STANDARD SOAP COMPANY'S  
WASHING POWDER,**

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12q

**JOHN TAYLOR & CO.**  
IMPORTERS,  
AND DEALERS IN  
**ASSAYERS' MATERIALS,  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.**  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKEN & SONS (Antwerp, Belgium) their superior  
**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FUNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, ETC. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast.  
A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' Sundries, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865. 1v10-1f

**WOODWARD'S GARDENS!  
MUSEUM,**  
Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.  
**Open Every Day! 10a**  
ADMISSION:  
To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
These Gardens are accessible by the Howard, Folsom and Market street Cars.  
Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 2v13qr

**Baldness! Baldness!!**  
CAN BE PREVENTED, BY USING

**Mayhew's Balsamic Hair Stimulant!**

THIS PREPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

**W. E. MAYHEW, Druggist,**  
N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13-6w

**Just Published.**

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS of the Nervous System and Reproductive Organs, to be had by address and enclosing twenty-five cents, postage stamps to secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

**HALL'S SARSAPARILLA,**  
YELLOW DOCK AND IODIDE OF POTASS.

THE BEST BLOOD PURIFIER KNOWN.

Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Boils, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Arsenic nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."

**SHEPARDSON & GATES, Prop's.**  
N. W. cor. Sansome and Commercial sts.  
22v13-3m

**TRUSSES! TRUSSES!!**  
Abdominal Supporters!  
Shoulder Braces, Etc., Etc.

WE WOULD CALL THE ATTENTION OF DEALERS and others to our complete assortment of these goods, including Bartlett & Hubbard's celebrated HALL AND SOCKET REVERSIBLE TRUSS which is decidedly the best article ever introduced into this market. By a combination of the movement of the ball and socket, and the movable arm, any desired angle may be obtained. Call and examine for yourselves. A liberal discount to the trade.  
**SHEPARDSON & GATES, Agents.**  
Corner Sansome and Commercial streets.  
22v13-3m

## Rheumatism!!

Still Another Witness!

LATROBE, Cal., Sept. 19, 1865.  
(White Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence of it, are too numerous to mention. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than at times a slight and temporary relief.  
About two years ago I was induced, by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably put it to flight. I therefore cordially recommend it to the afflicted as an unfailing remedy for Rheumatism.  
FRED'K FABER.

**RICHARD'S REMEDY** is for sale by  
**H. BOWMAN, Druggist, Sacramento.**  
And by Druggists generally.  
25v13

## The Mercantile Gazette

—AND—  
**PRICES CURRENT,**  
**E. D. WATERS, Proprietor.**

Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current "is the only

**Commercial Paper  
ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.

**Terms, \$9 per Year, payable in advance.**

**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every  
13v13-1f STEAMER DAY.

**REPORT  
—OF THE—  
COMMITTEE  
—ON—**

**SEWING MACHINES!**

California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

**FOR GENERAL FAMILY USE  
—THE—**

**"FLORENCE"**

—IS—

**"THE BEST."**

(Signed) **J. N. ANDREWS,  
THOMAS C. McHALE,  
L. ELKUS.**

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
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17v13



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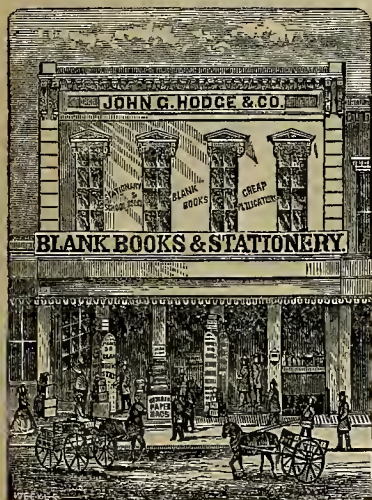
It deserves a hearty support from the mining and scientific public, and we are glad to see tokens that it is more and more appreciated.—*The Evening*.

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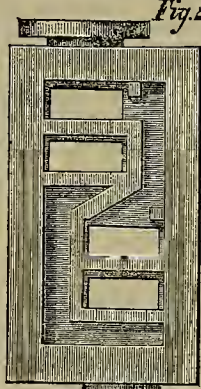
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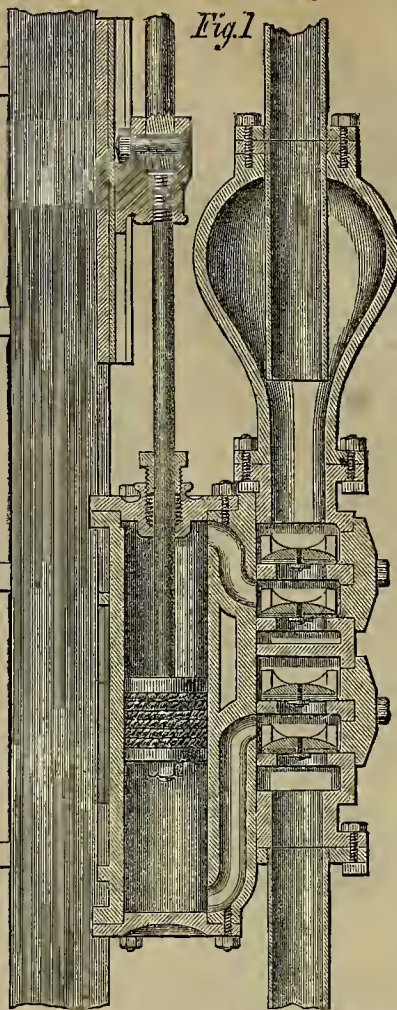
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ESTABLISHED [MAY, 1860.]

## VOLUME FOURTEEN

—OF THE—

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COMMENCING JANUARY, 1867.

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SAN FRANCISCO, SATURDAY, FEBRUARY 16, 1867.

VOLUME XIV.  
Number 7.

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## Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

135.—J. McKean, Camptonville, has forwarded to us a mineral stated to have been procured from the neighborhood of copper vein croppings in the Sierra county line. This mineral is of a somewhat complex character. We suspect, from its appearance, that it has been derived from a quartzose granitic rock, probably of the sienitic class, in which the hornblende originally assumed the form of actinolite; but has subsequently been metamorphosed, probably by thermo-aqueous action into the fibrous crystals of tremolite, which is now seen disseminated amongst the quartz matter which surrounds it.

136.—Charles Barker, of Georgetown, El Dorado county, sends us, through the hands of Mr. E. L. Smith, of this city, several very fine octahedral crystals of magnetic iron ore. The crystals are very perfect and highly magnetic.

COMMISSIONERS TO THE PARIS EXPOSITION.—The United States sends ten paid Commissioners to the Universal Exposition at Paris, and twenty honorary Commissioners, without pay. In addition to these, nearly every State sends one or more Commissioners to represent State interests, etc. England, Austria, Russia and Prussia, *per contra*, send only two or three Commissioners each; but it is presumable that, wherever these countries fall behind America in personal display, it will be more than made up in the larger number of articles which they will have on exhibition.

ANOTHER CALIFORNIA INVENTION FOR THE WORLD'S FAIR.—W. P. Miller is now having manufactured, in Philadelphia, a fine set of his adjustable tooth circular saws. R. Hoe & Co., New York, have also engaged to manufacture these saws. They are evidently well thought of in the East:

EN ROUTE TO ARIZONA.—Mr. C. A. Luke, Superintendent of the Specie Basis Company, Sacramento District, Arizona, returned from Philadelphia by last steamer. He will go direct to the company's works, where he is to commence smelting operations.

## The Diamond—Its Production.

The following remarks respecting the natural origin and the probability of an artificial formation of the diamond, being an extract from a lecture recently delivered by the celebrated metallurgist, John Percy, will be read with considerable interest, in connection with the series of articles which we have been publishing on graphite and its synonyms, especially the number in our last week's issue. Before introducing the Doctor's remarks, we would premise by saying that this precious gem is generally associated with a quartzose rock, called itacolumnite, from Itacolumni, a mountain in Brazil, where it occurs. It is a kind of sandstone, which often contains tale, chlorite and mica. A thin strip of it will sometimes bend without breaking, and is known by the common name of flexible sandstone. Diamonds have been found in Brazil, India, Borneo, Russia, and occasionally in North Carolina, Georgia and Virginia; also in California. With regard to their formation, Dr. Percy recently said:

The question is, if this itacolumnite be, as there is no doubt it is, a rock of sedimentary origin, have the diamonds been developed in the rock, by some means or other, subsequent to its formation, or were they deposited there contemporaneously with it? That is the point, and so far as he knew, it is a point which has not been clearly made out at present. All attempts concerning the artificial production of the diamond have hitherto proved most singularly abortive, and we have not the slightest clue in the world to the mode in which the diamond has been made in nature. It is evident that the condition or conditions of its formation must be excessively rare, because the quantity of diamond is, comparatively speaking, so small.

He could not help thinking—and it is the opinion of those who have directed attention to this subject—that one day or other we shall be able to crystallize carbon; but it does not follow that we should be able to crystallize diamonds of any value. It may be that the crystallization of diamonds of large size is a work of time—such work as only nature can accomplish in a satisfactory way. No doubt fluorine, or some similar cement, has played a part in the production of the diamond. It is a suggestion worthy of attention. Compounds of that element are very imperfectly known at present. In chemical works, at different times, processes are described whereby carbon has been separated from combination, and obtained in a crystallized form; but all these statements, he believed, were entirely erroneous.

Liebig has a notion that diamonds are the result of the final natural decay of vegetable matter, but in nature we do not find diamonds under these conditions when we observe the final products of natural decay—in our coal fields, for example, anthracite is one of the finest results of this decay; and no one, he believed, had ever found diamond in a coal-field, where one ought to find it, if it is the result of a final decay. We find graphite in nature, which is a crystalline form of carbon, just where we should expect to find it, but we do not find the diamond there.

But a small portion of the diamonds sold and worn are genuine. The diamond mines of Goleonda have given out, and those of India are rapidly failing. The scarcity of real gems has been met by the ingenuity of counterfeiters, who manufacture spurious

gems that frequently deceive expert connoisseurs. Large quantities of false gems are made in Birmingham and Paris, and shipped East, where the Orientals sell them to credulous European travelers as the real article. Nine-tenths of the diamonds now flaunted are mere paste ornaments, for which their wearers have given large sums.

NATIVE LEAD IN BUTTE COUNTY.—Mr. O. Jennings writes us from Magalia, Butte county, as follows: "In your issue of Jan. 12th, you stated that you were not aware that 'native lead' had been found associated with gold anywhere on the Pacific coast. Mr. Willson informs me that it has been found in a placer mine bearing his name, situated near this town. It was found about ten years since. One piece was about three-fourths of an inch square and one inch long; another was of an irregular form, but heavier than the first named. Others, but smaller pieces, were frequently found. They were all melted up and run into bullets. It melted at a very low heat, as he thought. The bedrock where he was working, was serpentine with a hill of slate to the west, from 50 to 100 feet high; and higher up the hill, is a quartz lode twenty feet wide, containing a considerable quantity or per cent. of cubical sulphurets of iron, but not a trace of galena or lead in any form can be seen at present. The sulphurets carry no gold so far as prospected; neither does the quartz; but still the vein has yielded largely of gold in former times." We now have reports of native lead in two localities on the Pacific coast—in the one above mentioned, and in the Comstock ledge at Nevada, as noticed in our issue of the 26th ult.

Our correspondent further adds, by way of a note, that "log or pole sluices are in use in this neighborhood, and if your readers would be benefited by a description of them, I will send it to you for their benefit." We should be pleased to receive a description of these sluices.

CALIFORNIA WINES IN NEW YORK.—A telegraphic order was received in this city, a short time since, for the shipment of a large quantity of a certain wine, manufactured in this State, if it could be shipped *via* the Isthmus, within a certain margin for freight. The price named was inside of the usual freight charges; but the knowledge that the P. M. S. Company had made an important discrimination in favor of flour, so as to leave a margin of profit to the holder, in the shipment of that article, held out the hope that they might do something, in the same way, to encourage the shipment and production of wine. The Steamship Company could not see it for their interest to do so, and the wine consequently remains in store. It is to be hoped, however, that the Company's design of putting on a *slow line*, for freight, may soon be carried out, when, perhaps, the case in point may be met. In the meantime, we understand that Wells, Fargo & Co., have the matter under consideration, and will ship the wine, if barely the smallest possible margin is left to secure them from actual loss.

THE FOREST TREES OF AUSTRALIA.—A correspondent of the *Morning Call*, of the 8th inst., corrects an error into which we were led in our issue of the 2d inst. in regard to the forest trees of Australia. The article in question was compiled from the recent proceedings of the American Institute at New York. On referring to it again, we find the statement that the blue gum (a species of the *Eucalypti*) "is extensively used in Victoria for engineering purposes, and the stringy bark is chiefly employed for fencing. With the exception of the red gum, these trees cannot be economically used in the construction of piers and wharves, owing to the rapidity with which they succumb to the attacks of marine animals, the Teredo and the Chelura. The Swan River Mahogany, a species of *Eucalyptus*, is the only wood yet used there which entirely resists these agencies." In the haste of reading, we inferred that the "stringy bark" was the bark of the blue gum, instead of being the designation of a particular species of the *Eucalypti*, distinct from the blue gum. Our thanks are due to the *Call's* correspondent for calling attention to the error, which, however, would have been more properly corrected through the same columns which promulgated the error.

CALIFORNIA LEATHER.—Californians interested in the manufacture of leather, will be rejoiced to hear that the new Revenue Bill strikes out, altogether, the tax on the manufacture of leather. The superiority of California leather is fast becoming a generally acknowledged fact at the East, and the shipments thither, especially of solo leather, have been gradually gaining for the past eighteen months, notwithstanding the great drawback in the shape of heavy taxes on the manufacture, which has cut the profits down to near living expenses. But with this tax removed we may expect to see a rapid increase of the business; especially when it is borne in mind that some of the heaviest establishments have been able to sustain themselves the past year, and pay this heavy tax, reaching, in some cases, as high as \$35,000 for a single establishment. With the tax thrown into the balance of profit, we may soon expect to see the "solid oak-tanned leather of California," forming a large moiety in the amount of that material worked up in the Atlantic States. It is much better to ship it thus, than to follow the old track of twenty years ago, and confine ourselves to the production of "raw hides" merely. We have enough of the raw material to supply our home market, and fill, with the balance, an important item in our annual record of exports.

LECTURES ON COMPOSITION AND ORATORY. Prof. A. Laynes commenced a course of academic lectures on these subjects, on Tuesday last, at Assembly Hall, corner of Kearny and Post streets. They will be continued on Tuesday and Friday evenings until the course, consisting of eight, is complete. These lectures are spoken of in the highest terms by competent judges.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Plumbago--Graphite--Black Lead.

BY DR. L. LANSZWEERT.

[Continued from Page 82.]

## GRAPHIC OR GRAPHITIC ACID.

On submitting graphite several times to a high temperature, with a mixture of chlorate of potash, and fuming nitric acid, Mr. Brodie obtained a product under the form of small yellow scales, transparent, crystalline and brilliant, which were insoluble in the acids, but capable of combining with the alkalies; presenting, in fact, the characteristics of an acid, from whence is derived the name of *graphic* or *graphitic acid*.

There is not room in the space allotted to these papers, to detail all the advantages derivable from this physico-chemical process; but it is evident that thereby the varieties of graphite, of inferior quality, can be made to rival, in fineness and purity, the best samples of natural graphite. We can allude to one or two facts only.

## THE SUPERIORITY OF PURIFIED GRAPHITE.

The superiority of pencils manufactured with this substance, deprived of all its hard and scratching impurities, and thus rendered a uniform and pure graphite in its whole mass, must be conceded. The superiority of the so purified and infinitesimally divided graphite, over the ordinary graphite or plumbago, even in its purest state, for glazing or lustering gunpowder, must be evident to every person acquainted with that operation.

It is well known that the rapidity of the inflammation of gunpowder depends on the fineness of its granulation. The finer the grains of powder are, the more rapidly will it burn—it may even be so finely granulated that it will explode with such rapidity as to burst the weapon. But a distinction must be made between powder in *grains* and powder as *dust*. In the former the flame is rapidly communicated to the mass through the interstices of the grains; in the latter it can only be propagated from molecule to molecule. Hence, the inflammation of fine-grained powder is *rapid*; while that of fine dust powder is *slow*.

To prevent, as much as possible, the attrition of the grains of powder by which this deteriorating dust is formed, is one of the processes of manufacture. To this end it has been found advantageous to glaze them with some substance. Graphite has been used for this purpose, which not only prevents the trituration alluded to, but has also been found to prevent the absorption, by the powder, of humidity from the atmosphere. Graphite, employed for this purpose, should be of the purest quality. Experiments have proved that there is a notable economy in the use of purified graphite for this purpose over the ordinary levigated or pulverized article. Such a series of experiments have been made under the direction of the well known chemist, Mr. Abel, at the Royal Powder Manufactory at Waltham Abbey, England.

In these experiments the difference of rapidity of explosion was shown in observing the propulsive effect produced by three equal proportions of the same powder. First powder, not glazed; second powder, glazed with ordinary purified graphite; third powder, glazed with natural graphite. The same mortar and equal charges were employed. The mean result of six charges, fired with each of the above different varieties of powder, exhibited the following explosive values:

First powder, not glazed.....353 feet.  
Second powder, glazed with purified graphite.....327 feet.  
Third powder, glazed with ordinary graphite.....295 feet.

Thus proving the value of purified over ordinary graphite. M. Abel is of the opinion that by employing a more perfect pro-

cess for purification, by which the lustering or glazing could be made *thinner*, a proportionate increase in the rapidity of inflammation could be obtained, and a coarser granulation could be admitted for specific varieties of powder.

The purification of the native graphite is one of the most important difficulties to be overcome in the manufacture of graphite crucibles, or electrical conductors for galvanic batteries; and one which must be thoroughly studied and understood by any person attempting to produce such articles from the California mineral. The presence of an oxide of iron, together with silica, generally found in graphite, is a great drawback to the refractory quality of crucibles, their tendency being to form a fusible glass. Crucibles of absolutely pure graphite, simply protected by a superficial, silicious varnish, will support a higher temperature than any other substance usually at our disposal.

## PURIFIED GRAPHITE AS AN ELECTRICAL CONDUCTOR.

The superiority of purified graphite, over that not purified, as a conducting medium for electricity, has been experimentally demonstrated by Dr. Mathieson, who has used the prepared and solidified plates, prepared by Brockdon's process, with the following interesting results:

The conducting power of silver being.....1.000  
Purified graphite of Ceylon gives.....0.0693  
Non-purified, ordinary graphite of Germany.....0.0039  
Coke of the gas factories.....0.0038  
Coke used in Bunsen's batteries.....0.0024

It will be seen from the above, that the electric conducting power of the purified Ceylon graphite is nearly eighteen times stronger than the ordinary graphite of Germany and the coke of the gas factories, and more than twenty-eight times as strong as the coke used in Bunsen's batteries.

Another series of experiments should be made to ascertain whether the cohesion of artificially solidified graphite is sufficient for its application to the manufacture of crucibles and galvanic plates.

## SOURCES OF GRAPHITE.

Some notice concerning the past, present and future sources of graphite, will afford, without doubt, much satisfaction to those interested in this branch of industry.

Graphite is found usually in primary or transition rocks. At Barrowdale, England, it occurs in nests, in a greenstone rock, which constitutes a bed in clay slate. In Glen Heath Farrar, in Invernesshire, it occurs in gneiss. The Barrowdale mine is especially interesting, and until lately has supplied most of the mineral for English pencils. It is located about six miles from Keswick, and is about half way up a mountain two thousand feet high, and somewhat difficult of access. Some of the nodules procured are pure plumbago; while others have particles of iron ore adhering to them. From the small supply of the material, and the high price which it commands in the market, the mining operations are conducted with much caution and secrecy. This has led to a very stringent set of rules for working. The mine is now nearly exhausted. A material for pencils is very much used, especially in France, made of plumbago mixed with very fine clay. Any required degree of hardness can be given to the composition, by varying the proportion of the ingredients.

Wolf's "purified lead pencils," sold in London, have thirteen degrees of hardness. Mr. Brockdon, and others, manufacture pencils in which the *hardness* and the *blackness* vary in any desired degree.

In the coal formation near Cummock, in Ayrshire, it is imbedded in greenstone, and in the columnar glance-coal.

A variety, nearly as pure as that of Cumberland, but more amorphous and friable, occurs at Passau, in Bavaria, from whence large quantities are exported to England, especially for polishing purposes.

The crucibles of Passau are much in demand, but they are now of an inferior quality, compared with those of ten or twenty years ago, when they could be used for thirty operations, while at the present day they do not stand more than eight or ten. The material from which these crucibles are made, does not properly bear the name of graphite—it is gneiss, containing only 35 to 48 per cent of graphite.

Deposits of lamellary graphite are found in Hindoostan; in the north, *i. e.* in the Himalaya mountains; south, in Travancore, and abundantly in the island of Ceylon. This latter is remarkable for its purity, containing only minimum quantity of 1.2 of silicious ashes.

In 1862, 2,084 tons of plumbago were shipped from Ceylon, and of these, no less than 1,736 tons were brought to England. Most of this quantity is probably used by the Patent Plumbago Crucible Company, at

Battersea, London, who also employ the Stourbridge clay. In the same year the price of Ceylon graphite was £10 per ton; at the present time it is worth £25.

Lately, Spain has exported to England considerable quantity of a good quality of graphite.

A deposit of graphite, which is said to be very abundant, has lately been discovered by an enterprising Frenchman, M. Alibert, in the Batongal mountains, south of Siberia, near the confines of China.

At the London Exhibition of 1862, the Russian department made a magnificent display of articles manufactured from Siherian graphite. In case the deposit of graphite in Siberia should prove to be as rich as proclaimed by M. Ailbert, the English manufacturers could be supplied at reduced prices. It should be stated, however, that the superior quality of graphite mined in the Siberian locality, is obtained with a large amount of an inferior quality; but the latter, according to assays made, could be easily and completely purified.

The graphite of Barrowdale, above referred to, is sold mostly by auction, at prices ranging from thirty-five to forty-five shillings per pound. According to Dr. Ure, the net produce has, in the six weeks annual working, of some years, amounted to 30,000 to 40,000 pounds.

As the writer of the foregoing has been unable to procure samples and data of the California graphite, so as to submit the same to proper assays and purification, to ascertain its value in comparison with that obtained from other localities, it is to be hoped that, with the spirit of California energy, this valuable product will not be suffered to lie dormant, and that at some day not far distant, we may be able not only to export this mineral, but also to manufacture our own crucibles, fire-bricks, etc., for which we are now dependent on foreign markets.

[Written for the Mining and Scientific Press.]

## Cement Mining in Placer County.

FROM AN OCCASIONAL CORRESPONDENT.

MESSEURS. EDITORS:—You have asked me for some jottings with regard to the gravel claims, since my return from the interior. As the Yuba and Nevada county claims have been pretty well ventilated, I herewith give you some items from a range of claims at Forest Hill, Placer county, which the public know but little about. Why these rich claims should not be better and more generally known, I don't understand, unless the owners thereof have done so well that they prefer to keep "shady" to avoid the inquisitive tax collectors.

I will commence on the north, with the Maus claim, which is about three-quarters of a mile from Forest Hill. The eastern boundary of this claim is some 2,000 feet east of the road leading to Bath and Michigan Bluffs. The western line is a cañon, known as Devil's Cañon, 2,000 feet west of the road, making the claim 975 feet wide by 4,000 feet long. Adjoining this on the south is the Garden claim, 270 feet wide, and same depth with the first—4,000 feet. Next is the Eagle, 165 feet wide; then the India Rubber claim, 200 feet wide; the Alabama claim, 270 feet wide; the Pacific Blue Gravel claim, 950 feet front by 594 feet back. This last has recently erected a 10-stamp mill, now about ready to commence work.

Next is the Gore claim, which takes its name from its shape, being 594 feet at back, and running to a point in front; then comes the famous Jenny Lind, 400 feet front, running through to Devil's Cañon. The front part of this claim has already yielded \$1,100,000; the tunnels have caved in, and the back remains unworked, which is richer than the front.

Next adjoining is the New Jersey claim, say 400 feet front by 4,000 feet deep and 650 feet broad, on rear line, as one of its sides run going. It is opened by a main tunnel 2,800 feet long, with lateral drifts of 1,200 feet more, making 4,000 feet in all. This claim has produced \$850,000, and is said to be the best opened claim on the Pacific coast. In running the main tunnel, eight distinct streaks of rich gravel have been struck, resembling ancient river beds. From one spot of 400 by 500 feet, seven feet high, the above mentioned amount of \$850,-

000 has been taken. An airshaft was started on this claim to run up to the surface on the hill, a distance of 460 feet; after going up 200 feet it was abandoned, air having been obtained by means of a water blast. The shaft showed the pay gravel to continue for 178 feet above the bedrock, which is an interesting fact to ascertain. All of this gravel could be economically worked by mill process.

Next adjoining the New Jersey claim, is the Independent, 250 feet wide on front, running through, same width, a distance of 4,000 feet; The front part of this claim has paid \$400,000. Next comes the Snyder, 100 feet wide; then the Northwood, 320 feet; then the Boston, 96 feet; next the Baltimore, 1,538 feet front and 1,118 on the back. The latter company erected a 5-stamp mill, found the ground paid well, and then put up an 10-stamp mill, with power for twenty. Adjoining this, is the Hope—first called Little Hope, but since then it has confirmed great hopes. The tunnel in this claim is 1,800 feet long, developing a splendid claim. A 20-stamp mill is just completed on this claim. This claim is 528 feet front and 975 feet on the back. Next to this is the Uncle Sam, 165 feet wide, and running through the hill. Then comes the Green Spring, 570 feet wide all through. Next is the Oro, 1,000 feet wide, and through.

This claim has a fine 20-stamp mill in operation under the control of Mr. Triglow, from Washoe, who says he would not exchange it for the whole Comstock lode.

Adjoining the Oro, is the Dardanelles, from which over \$2,000,000 has been realized. It is about the size of the Oro claim. This claim was worked with hydraulic pipes, and I am confident that \$4,000,000 was wasted in getting the \$2,000,000. The Americus River, just below there, in its rich placer washings, affords abundant proof of the immense waste from these claims.

I have here given you the names of nineteen claims in Forest Hill, covering an area of ground, 8,800 feet long by 4,000 feet deep or broad. Statistics show a yield from the working of these claims, by sluicing and hydraulics, of about \$9,000,000—or an average of about \$500,000 from each claim. Had this dirt been worked by mill process, it would unquestionably have produced \$36,000,000 instead of \$9,000,000. A large proportion of this dirt that will not pay by washing, will pay well by milling, owing to its being so hard that it does not slack nor break up, even when it passes through several thousand feet of sluices; while in a mill, it will pay equally as well, whether it be hard or soft. These recently erected mills will soon demonstrate all this.

I claim that not one-tenth part of the pay dirt in these claims has been worked out, taking them all together, and I claim that the \$9,000,000 obtained from that tenth which has been worked, should have yielded at least \$36,000,000. And I further claim, that the working of gravel claims is easier, cheaper, surer, and more profitable than quartz.

I can scarcely account for the neglect of these gravel claims, among the seekers after wealth, except it arises from the indifference of the owners to sell, and their carelessness in grouping together statistics, that fairly and fully represent their value. Still, like everything else in California, these claims must go through their dark days or apprenticeship, before even their present owners can clearly appreciate their value. The imperfect mode of working them heretofore, is one great cause of their not being better known; but all that will soon be changed, and gravel claims will take their relative rank in the gold mining of the coast. In my next, I will endeavor to give you some further statistics and other facts with regard to this interesting and important locality.

SKILLED LABOR.—The market value of skilled and educated labor in some departments of mechanics is enormous. In the window-glass factories of Pittsburg blowers and flatters receive as high as \$250 per month; while a few of the most skillful often receive as high as \$20 per day for their services. Some of the melters in steel works receive from \$20 to \$22 per day. Glass silverers, where the largest and most expensive mirrors are required, receive very high wages. In fact, it is said that there are not half a dozen of the really proficient in this class of workmen, on the continent. Not one in a hundred of those who make the attempt can ever arrive at the requisite degree of proficiency in this business to turn out first class work. The skill in both this and steel melting is in the quick and proper perception of the eye. The same remarks are also true of die-cutters for type foundries.



## Mechanical.

## REMOVING BOILER SCALE BY ELECTRICITY.

An instrument for the removal of scale from steam boilers, by means of electricity, has recently been devised by some party at the East, who, or where residing, we have not learned. A lengthy notice of it recently appeared in the *Chicago Railroad Journal*, to which was appended a long list of railroad and other companies who are said to be using the same, and who speak highly of its efficiency.

The instrument is said to be simple in its construction, and one which can be readily attached to any boiler in use. It consists of an insulated copper wire of spiral shape, terminating in a disk of composition metal, from which extend seven sharp, stem-like points or radiators. This electrical apparatus is placed near the top of the steam room of the boiler, where the steam is driest. Its effect is said to be such that all mineral atoms instead of being attached to, are repelled from the inner surface of the boiler, while sedimentary deposits are prevented, and incrustations already formed are displaced, so that they can be blown out by opening the surface or "blow-off cock," once or twice each day. The cost of the instrument, with the privilege of using it, is \$100 for each boiler.

The description of the instrument is rather vague. How it is to be placed in the boiler, whether in electrical connection with it, or through it to the earth, we are not informed. But, however that may be, if it operates as above described, and as a great number of respectable testimonials say it does, it is a very valuable discovery. The damage from "scale" in boilers, in many places, is exceedingly troublesome and costly. The cost of cleaning and the stoppage of works for that purpose; the loss of heat through the non-conductivity of the scale, to say nothing of the rapid deterioration of the boiler in consequence, or the great loss of property and life from explosions brought about thereby, in many parts of the country, is a very heavy tax upon all steam operations, whether in steamboats, railroad locomotives or stationary engines. We hope soon to learn something further of this reported discovery or invention, when we shall make further allusions to it.

**A SPLIT SPIKE.**—The latest novelty in the railway line is a split spike, so constructed, that when it is driven into the sleeper, the two prongs will diverge—thus, when driven home, occupying a place in the wood like the diverging roots of a tooth in the jaw. With a  $4\frac{1}{2}$  inch spike, the prongs diverge about  $1\frac{1}{2}$  inches. By the use of this contrivance, a much lighter spike may be used to give the same solidity to the work. The saving in a mile of railroad construction is 1,750 pounds; while the power of tension of the split over the common spike is more than three to one. Experiments have proved that the power required to draw a "snake-headed" split spike, which is driven outside of a rail, is about 5,986 pounds; that required to draw a round-headed split spike which is driven through an eye in the flange of the rail, is 7,656 pounds; while the power required to draw a spike of the ordinary construction is generally less than 2,000 pounds. The split spike can be drawn, however, and when drawn, its two legs can be readily brought together again by one or two blows with a hammer, when it can again be driven with as much facility as an ordinary spike. This invention is illustrated in the *New York Artisan* of January 9th, 1867, and was patented by Launcelot Kirkup, of Brooklyn, N. Y., January 2d, 1866. The invention has been sold to the Bolt Machine and Spike Company, H. A. R. Moonat, President, 71 Broadway, New York city.

**MANUFACTURES AT THE SOUTH.**—Eleven cotton mills are now in successful operation in South Carolina.

**WOOD SUPERSEDED IN THE CONSTRUCTION OF RAILWAYS.**—While the Bessemer steel is pushing out iron in the making of rails, iron, on the other hand, is being substituted for wooden sleepers, and every day proves the advantage of the latter. In 1862, Herr Heusinger von Waldegg, in a work entitled "Die eiserne Eisenbahn," proposed an elaborate plan for substituting iron for wood in all accessories and appurtenances of railway lines. It appears that his system is gaining ground in Germany. An experiment of forming a line entirely of iron is being tried at the present moment on the Rhenish Railway, near the Coblenz Station, by the director of the company, M. Hartwick. The rail is of the Vignoles form, with a case of the ordinary width, but nearly ten inches high. The weight of the rail is about 1 cwt. per meter, or 34 lbs. per foot; it lies directly on the ballast, and the two irons of the same way are simply connected by stretching rods of round iron,  $1\frac{1}{2}$  inches in diameter, bolted close up underneath the head of the rail. This rail resembles the Barlow rail, and the reputation of M. Hartwick as an engineer is considered a guarantee of its success. The Mediterranean Company has ordered of the Menans Iron Company, in Franche Comté, ten thousand iron sleepers. Those to take the joints weigh 118 lbs., and the others 85 lbs. each; the prices are 13f. 60c. for the former, and 10f. 50c. for the latter. In other words, they will cost just about \$10 a ton, delivered at the railway station. These sleepers are now on trial on the main line, near the station of Maison Alfort. The same works have also received an important order from the Northern Railway of France for 6,000 iron sleepers at 9f. each, delivered at the company's stations; each of these sleepers weighs 77 lbs., which brings the price up to about \$10 2s. 6d. per ton.

**PLANING CURVED SURFACES.**—Hitherto it has been found impossible to adapt the ordinary planing machines for curvilinear planing, but at length this problem has been solved by Mr. Middleton, the head of the machinery department in Chatham dockyard, who has succeeded in planing the whole of the curves and angular surfaces of the iron steam-piece for the Monarch, with no other appliances than the common planing machine. —*Engineer.*

Links for locomotive valve gear have been planed for years in our machine shops on common planers, and by half a dozen different methods. It is no trouble at all. A common way is to take the vertical screw out of the tool holder, and attach a rod to the slide, with the bottom of said rod working in a curve of the required radius formed in a piece bolted to the bed of the planer. *Scientific American.*

**HOW TO STRAIGHTEN HARDENED STEEL.** To straighten steel after it has been hardened and tempered is a great annoyance to the machinist. It is one thing to finish a tool or mechanical appendage requiring hardening, and another to bring it out, hardened as it should be, right. Many a drill, turning tool, tap, etc., is ruined simply for want of knowledge of this art. To be sure, the bulk of the responsibility rests with the temperer or hardener; but what they fail in, may in many cases be remedied by knowledge of a simple fact. To straighten a piece of steel already hardened and tempered, heat it lightly, not enough to draw the temper, and you may straighten it even on an anvil, if not really dead cold, by a hammer; but it is best to straighten it between the centers of a lathe, if a turned article, or on a block of wood with a mallet, where the article, cold, would break like glass. Warm, it will yield readily to such blows as are said to kill the devil easy.

**MACHINE VS. HAND LABOR.**—The Lowell factories employ but 13,115 persons—8,218 women and 4,897 men—to do all the work of carding, spinning, dressing and weaving for 11,358 looms, cotton and wool. To keep these looms employed, about 404,000 spindles are required. To accomplish the same amount of work by the old process of the hand cards, spinning wheel and hand looms, would require nearly or quite one and a half millions of operatives!

**BENNINGTON, VERMONT,** has the most powerful water fountain in the world. At the first trial it threw water to the height of 115 feet. The water is conveyed in iron pipes a distance of 6,600 feet, the fall in the whole distance being 305 feet.

**HOT AND COLD BLAST.**—An inquiry instituted by the British Association has determined the ratio of strength in hot-blast iron as 1,024.8, and of power to sustain impact as 1,226.3, to 1,000 in cold-blast iron.

## Scientific Miscellany.

## Planetary Life.

The fact that the earth, with all the planetary members of the solar system, was once in a condition of extreme heat, is now pretty generally acknowledged among scientific men. The cooling down of each of these masses of matter has been gradual, and more or less modified by their various distances from the radiating influences of the sun, and each other. The smaller interior planets, Venus and Mercury, have still a temperature greatly exceeding that of the earth; and in which no organized vitality can exist.

Professor Loomis has suggested the idea that organic life in the planets Uranus and Saturn has long since passed away, while the condition of Jupiter is doubtful. In all probability Mars is, like the earth, inhabited, and possesses a climate not unlike our own. The telescope has rendered it quite certain that snow and rain fall there, as here. The snow-belt is visible, like that on the earth, approaching the equator in the winter of that planet, and melting away to near the same latitude as it does on the earth during the summer months. In all probability Mars and the earth are the only two planets in our system which are inhabited. The two outer planets have doubtless accomplished the object of their creation; while the two interior ones have yet to cool for some millions of years, before they become fitted for organic life.

That the planets were originally projected from the sun, there is now a very general belief; that they are gradually approaching that luminary, is in all probability an astronomical fact, although the most careful observations hitherto made, with regard to the movements of the earth, have failed to detect any such movement on the part of our planet. But then we should recollect that the period of a thousand years or so, during which accurate observations could have been made, is but an instant in the great cycles by which the origin and existence of systems are measured.

**LAMP EXPLOSIONS.**—It is estimated that five thousand lives have been lost in the United States from lamp explosions. Many were killed, years ago, when the various burning fluids, under the general name of camphene, was first introduced; but perhaps an equal number have fallen victims to casualties resulting from explosions of kerosene. The most general cause of these explosions is the use of an inferior quality of oil, which generates a gas which explodes at a low temperature, or on the least application of flame. Many such occur by blowing out the lamp; the flame in the act is blown down the globe, which is filled with an explosive mixture of gas and air, which often proves terribly destructive, chiefly by scattering the burning liquid over the person of the unfortunate victim.

**ARTIFICIAL CRYSTALLIZATION.**—Mr. E. Fremy, in a communication to the French Academy of Sciences, describes various methods for slowly precipitating certain chemical compounds which are amorphous, owing to the suddenness of their formation, thus enabling him to obtain them in a crystalline form. In some cases the bodies to be decomposed were introduced into liquids of different density containing gum, sugar, gelatine, etc.; in others, they were placed in vessels of wood or unglazed porcelain. He also had recourse to the Osmose process. Thus he succeeded in obtaining crystals of sulphate of baryta, carbonate of lead, sulphate of lead, sulphate of strontia, carbonate of baryta, borate of baryta, chromate of baryta, oxalate of lime, magnesia, and several sulphides. He did not, however, succeed in obtaining pure quartz by the reaction of alkaline silicates on certain acids.

**LEMON TREES.**—It is said that lemon trees grown from the seed will never bear unless they are grafted; at least in any country where they are not indigenous. The mode of grafting is the same as with the apple tree.

## STRUCTURE OF THE HEAVENLY BODIES.

A lecture before the British Association on the results of spectrum analysis, as applied to the heavenly bodies, by William Huggins, F. R. S., lately published, concludes as follows:

1. All the brighter stars, at least, have a structure analogous to that of the sun.
2. The stars contain material elements common to the sun and earth.
3. The colors of the stars have their origin in the chemical construction of the atmospheres which surround them.
4. The changes in brightness of some of the variable stars are attended with changes in the lines of absorption of their spectra.
5. The phenomena of the star in Corona appear to show that in this object at least great physical changes are in operation.
6. There exist in the heavens true nebulae. These objects consist of luminous gas.
7. The material of comets is very similar to the matter of the gaseous nebulae, and may be identical with it.
8. The bright points of the star clusters may not be in all cases stars of the same order as the separate bright stars.

It may be asked what cosmical theory of the origin and relations of the heavenly bodies do these new facts suggest? It would be easy to speculate, but it appears to me that it would not be philosophical to dogmatize at present on a subject of which we know so little. Our views of the Universe are undergoing important changes. Let us wait for more facts, with minds unfettered by any dogmatic theory, and therefore free to receive the obvious teaching, whatever it may be, of new observations.

**ORIGIN OF ANTHRACITE.**—Doctor Percy, F. R. S., in his tenth lecture on Chemical Geology—after describing an experiment of Daubrée, who subjected fragments of fir-wood, in a close tube with water, to a high temperature and pressure, and thus transformed the wood into a black mass having a bright luster, and resembling anthracite—proceeds to say: It has long been supposed that bituminous coal is converted into anthracite simply by application of heat; but something more than this is required to satisfy the conditions, for if it were simply a matter of heat, we ought to get, not anthracite but coke, also a proportionate increase in the quantity of fixed organic matter, or ash, in the coal. It seemed to him there must have been some other condition obtaining in order to account for the conversion of bituminous coal into anthracite. He believed that water played an important part in this conversion, that anthracite has been the result of thermo-hydric or hydro-thermic action; and that water has in some way or other removed to a large extent the inorganic matter or ash.

**TOUGH SOAP-BUBBLES.**—Those who have experimented with the ephemeral refracting spheres blown from common soap and water, will be glad to know that bubbles of extraordinary size and strength can be formed from a mixture of oleate of soda and glycerine. They may be kept on glass or under bell-jars for twenty-four hours. When dropped upon the floor they rebound like a ball. If carefully cut open with a pair of scissors, wet with the solution, smaller spheres may be blown inside. Under the microscope the movements and iridescence of a small bubble present many beautiful changes.

**PERCHLORATE OF THALLIUM.**—Prof. H. E. Roscoe regards this salt as isomorphous with the potassium and ammonium perchlorates. The angles observed by Mitscherlich, in case of the latter, agree exactly with those of the crystalline thallium perchlorate. The isomorphism of ammonium and thallium sulphates having been previously determined, these resemblances in structure, as well as the fact that thallium alum has been formed, furnish strong ground for placing thallium in the group of alkaline metals. Although it is devoid of prominent alkaline characteristics, doubtless the similarity in the structures of the salts mentioned, arises from the fact that it, like all the alkaline metals, is monatomic.

**TO RESTORE STAINED GLASS.**—M. Cheveret states that old and dim stained glass of windows can be restored to its original brilliancy by a simple process. The glass is taken from the window and plunged for several days in a weak solution of carbonate of soda; it is next washed in clean water, and afterwards dipped for some days in a solution of hydrochloric acid sp. gr. 1.080. In this way the colors become as beautiful as when they were first transmitted.



## New Patents and Inventions.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**WOOD SAWING MACHINE.**—At a recent meeting of the American Institute, Mr. Havens exhibited a small model of a machine intended to take the place of the buck-saw. A working model would be about five feet high; it works by a crank and a cam; the saw is a part of a circle, cuts both ways, and is said to saw eight cords of wood a day. How hard it works is not stated. The cost to manufacture is from \$8 to \$10; the retail price, \$30.

**EXTRACTING WATER FROM THE AIR.**—C. J. Bingham, residence not given, writes to the American Institute that he has invented a plan for taking water out of the air for the use of families and of ships at sea. He adds that he is poor, and seventy-two years old, that he has suffered thirty or forty years from paralysis, he wants a patent or premium from Congress so that he can get a home for his great discovery, and he thinks the Institute the party to direct him. The above is published in the New York Tribune's report of the proceedings. The report does not intimate what action, if any, would be taken.

## PATENTS RECENTLY ISSUED.

**QUARTZ CRUSHER.**—J. Varney and A. Rix, San Francisco, Cal.: Claim the combined use of the wrought-iron binder, k, the toggle-bar, M, and jaws, B and E, constructed and arranged substantially in the manner and for the purposes set forth.

**PUMP VALVE.**—W. D. Hooker, assignee to himself and Volney Cushing, San Francisco, claim an improved pump valve, constructed with guides upon its sides, arranged as and for the purposes set forth.

**MARINE MOTOR.**—W. P. Kirkland, San Francisco, Cal., claims a pipe, having stop-cocks, water-wheel, and water-pipe, in combination with any suitable device connected with the said water-wheel for transmitting its power, when arranged together substantially in the manner and for the purpose specified.

**AMALGAMATOR.**—Syranus Standish, Pacheco, Cal., claims, 1st, The spiral-shaped flanges or lips, of the rotating mill-arms, substantially as and for the purposes specified. 2d, The shoes, hung to the mill-arms, so as to be susceptible of a lateral play upon such arms, substantially as and for the purpose described. 3d, The shoes, having spiral-shaped flanges or lips upon their outer ends, as and for the purpose set forth.

**BEARINGS FOR SHAFTS OF STEAMSHIPS.** George K. Gluyas, of this city, devised the arrangement of a frame, inclosing adjustable blocks, guided by slides and blocks, and combined with rubber springs and adjustable screws, substantially as set forth in his specifications.

**WASHING MACHINE.**—John S. Hittell, of San Francisco, claims a combination of movements as an improvement to a washing machine.

**PUNCH.**—Richard Hughes, Virginia City, Nev., claims a holder, having spring-arms or jaws, with socket to receive needles, and separating plates, substantially as described.

**MATERIAL FOR STUFFING MATTRESSES AND FOR OTHER PURPOSES.**—H. R. Hildreth and others, Dutch Flat, Cal., claim, 1st, As a new article of manufacture and as a substitute for the ordinary curled hair, the fiber of the soap plant, when properly treated and manipulated therefor. 2d, Treating the fiber of the soap plant substantially as described and for the purpose specified.

**STEAM GENERATOR.**—W. D. Andrews, New York city, claims a boiler having a fire-place extending over its entire horizontal area, with the exception of a narrow water-space surrounding it and a series of tubes, whether one or more, passing horizontally through the water-space above the fire-place, when the said fire-place and the said tube or tubes are connected by and communicate through a combustion chamber formed outside the boiler having openings, adjustable or otherwise, for the admission of atmospheric air thereto, and an opening or openings passing through the water-space surrounding the fire-place and communicating with the latter, when the whole is constructed and arranged so as to operate substantially in the manner described and for the purpose specified.

The Mining and Scientific Press commenced a new volume January 5, on a new type of California make—the first of the style, the editors say, which has yet appeared in print on this coast. It looks well.—Humboldt Register.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
February 16, 1867.

## CITY STOCKS.

More than usual activity has pervaded the city share market since our previous reference, particularly in Insurance Company shares. Pacific Ins. Co. sold at \$156 per share. At a meeting of stockholders, held on the 11th instant, this company increased its capital stock from \$750,000 to \$1,000,000, and the number of shares from 7,500 to 10,000. Union Ins. Co. obtained \$107.50; National, \$73, and Fireman's Fund, \$10.50 per share. S. F. Gas stock sold to a very considerable extent at \$66.50@67.50. This company paid its usual monthly dividend yesterday. State Telegraph Co. sold at \$32. The Bank of California disbursed its usual monthly dividend of 1 per cent. on its capital stock of \$5,000,000 yesterday. The Sacramento Gas Co. paid its usual dividend of  $\frac{1}{4}$  per cent. per month on the 1st instant, and the Spring Valley Water Co. disbursed the same amount in dividends on the 10th inst. North Beach and Mission R. R. also paid to its shareholders a dividend of  $\frac{1}{2}$  per cent. per month on Feb. 10th. Cal. Steam Nav. Co. sold at the close at 61 @ 61 $\frac{1}{2}$  & cent.

At an election for Directors of the Odd Fellows' Savings Bank, held on Tuesday evening, February 12th, the following gentlemen were elected: Martin Heller, Henry B. Brooks, Abram Block, John Cammet, Charles N. Fox, David Hunter, George T. Bohen, Daniel McLaren, Moses Selig, Wm. A. Woodward, David Meeker, Charles Bernard, Jos. Brandenstein, Benjamin Hagan, Henry C. Squire, John F. Miller, John F. Morse, Charles Metzler, Frederick Fortmann, Newton Booth, Aaron A. Sargent, and Benjamin Price.

## MINING SHARE MARKET.

Considerable activity has characterized the market in most mining stocks, and large sales have been made, for the most part at lower rates. Advices from the leading mines continue favorable, and the improved condition of the roads will add very materially to their receipts of bullion. The judicial proceedings recently instituted in Nevada against the Savage Company have been the subject of much comment in mining circles. If we are correctly informed, there is but little intrinsic merit in this adverse claim, and the recent heavy "short" sales may afford some clue to the vigorous efforts of interested parties to bear the stock.

**HALE & NORCROSS**—has not been in the market for months past. During the present week \$2,500 was bid. The bullion received by the company during the month of January amounted to \$94,440.33, being the yield of 1,746 $\frac{1}{2}$  tons of ore, and showing an average of \$54.06 to the ton. Of this amount of ore, 36 $\frac{1}{2}$  tons were first-class, yielding \$8,131.31, or an average of \$223.29 per ton. On February account, up to the 10th inst., 1,474 tons of ore—42 tons of which are first-class—have already been reduced. This company disbursed to its shareholders yesterday \$125 per foot (\$50,000), leaving a net surplus on hand of over \$130,000 after paying this dividend.

**SAVAGE**—has steadily declined during the present week, selling at \$1,910@1,930, then at \$1,800@1,700, and closing yesterday at \$1,790. Owing to the peculiar character of the legal difficulties with which this company has at present to contend, the Superintendent's time has been greatly monopolized, and we are without a very extended report for the week ending February 9th; however, we learn that during that week 1,182 tons of ore were extracted from the mine, the assay value of which is given at \$33.62 per ton. We are also informed that the sixth and seventh stations are looking as well as formerly. The good quality of ore heretofore obtained from the south mine, it is said, continues to be maintained, and the lower station is producing the richest.

**YELLOW JACKET**—has been in active demand, advancing from \$810 to \$865, then falling to \$795 and \$740, and closing at \$785. From a statement made by this company, we obtain the following summary of their operations during the month of January:

RECEIPTS.	
Bullion.....	\$156,200 37
Other sales.....	8,498 00
Balance on hand Dec. 31, 1866.....	99,760 38
	\$264,458 75
DISBURSEMENTS.	
January dividend.....	\$ 60,000 00
Ordinary expenses, including December labor account.....	194,639 33
Extraordinary expenses.....	7,020 20
Cash on hand.....	2,797 22
	\$264,456 95
LIABILITIES.	
Am'ts outstanding.....	\$155,424 39
Cash.....	2,797 22
	\$158,221 61
ASSETS.	
In Bank.....	\$131,896 27
Supplies, etc.....	26,325 54
	\$158,221 81

**CROWN POINT**—has met with more than usual inquiry, opening at \$1,000, then selling at \$975@940, and at the close obtaining \$855. This company disbursed a dividend of \$100 per foot to its shareholders yesterday. Deducting the \$60,000 required for the dividend, leaves a cash balance in the treasury of \$50,000. During the first week of the present month, 897 tons of ore were taken from the mine. It is said that the developments in the southern portion of this claim are looking better than formerly. At the present rate of progress made in the shaft, it is thought that the 500-foot station will be opened about the 20th instant.

**GOULD & CURRY**—sold early in the week at \$530@540, then at \$510, seller 3, and at \$530@510, and closed yesterday at \$530. The upper works of this mine are said to continue in a good condition. This company at present only employ their own mill in the reduction of ores, and the management of all its affairs are now on a much more economical basis than formerly, the expenditures being about \$45,000 per month. The main shaft is being sunk with great vigor, and it is thought, under favorable circumstances, that the sixth station or 1,025-foot level will be opened in April next. The bullion returns from the 1st to the 14th instant amounted to about \$32,000.

**CHOLLAR-POTOSI**—opened at \$232, receded to \$228, advanced to \$231, then sold at \$220@215, and closed at \$221. Little work was done under the Blue Wing station during the week ending February 9th; however, the drift has been widened preparatory to the commencement of extracting ore. A winze is about being started in a deposit of ore in the first station, new shaft, to connect with the second station. The ore sent to custom mills during the week closing with Feb. 9th, amounted to 1,060 tons.

**OPHIR**—improved from \$145 to \$202.50, then sold at \$200@195, and at the close realized \$193. The tenth station drift east on the 11th inst., was in 46 feet, the distance made being at the rate of 1 $\frac{1}{2}$  feet per day during the previous week, and the expense so far having been \$25.82 per foot. The west drift on the ninth level, carries green stone, and the drift on the eighth level has reached Mexican ground.

**IMPERIAL**—realized \$180@185, then sold at \$175, and closed yesterday at \$163. This company disbursed \$12 per share in the shape of dividends to its stockholders yesterday. The first clean-up of the present month amounted to \$19,250.

**EMPIRE**—advanced from \$175 to \$180, and yesterday \$180 was bid.... **BELCHER** receded from \$130, seller 10, to \$125, then sold at \$130.... **BULLION** fell from \$22 to \$14.50, and at the close yesterday sold at \$17.25.... **CONFIDENCE** was actively dealt in during the present week, selling at \$28, buyer 10, then at \$16@17, closing at \$18. An assessment of \$25 per share was levied on this stock on the 11th inst.... **OVERMAN** sold at \$24, then at \$20@18.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$859,565.

**INCREASED DUTY ON COPPER ORE.**—Copper ore will soon be admitted into this country an *ad valorem* duty. Mr. Connors has introduced a bill to change the *ad valorem* to a specific duty of three cents a pound. Such a change will be equivalent to a prohibition; for a duty of three cents per pound on first-class copper ore, as it ordinarily runs, would approximate so nearly to the full value of the copper which it would contain, as not to leave sufficient margin to pay for smelting and refining it.

A **BROOM FACTORY** has lately been started in Portland, Oregon, which turns out one thousand brooms per week. The design is to supply the home market with this useful implement, which has of late been furnished from California.

## The New York Metal Market.

We quote from Winterhoff's *Metal Circular*, dated New York, December 31, 1866:

**TR**—is quiet, but firm, at 21 $\frac{1}{2}$ c. (gold) for Straits, 23 $\frac{1}{2}$ c. for Banca, and 21 $\frac{1}{2}$ c. for English. The consumption has been larger than in any former year. From the East Indies 10,000 slabs are on the way, of which 6,000 slabs have been sold to arrive. In Europe the stocks are very large, but the shipment from the East Indies are falling off, whilst the price is so low that it begins to attract the attention of speculators. Importation for the month, 5,700 slabs Straits, and 25 tons English. The imports of 1866 at Boston and New York amount to 107,500 slabs, against 80,550 slabs in 1865, and 35,700 slabs in 1864. The stock now on hand in Boston and New York is estimated at 30,600 slabs, against 19,700 slabs, December 31st, 1865.

**SPELTER**—is very dull, although more firmly held in consequence of the advance in London. Silesian and Stolberg are quoted at 6 $\frac{1}{2}$ c., gold. The domestic article does not appear in any quantity in the market, but is converted into sheet zinc by the producing companies. The importation for the month is 105 tons. For the year, 4,375 tons, against 2,400 tons in 1865.

**COPPER**—has declined again to 26c. (currency) for Portage Lake and Baltimore, and 27c. for Detroit, without any business of consequence. In the face of the decline in gold and the discouraging advices from London, no immediate recovery can perhaps be expected. The price is exceedingly low both in Europe and here, but with the first revival of general business it is sure to advance. To-day's price is equal to 19 $\frac{1}{2}$ c., gold, and as the duty of 2 $\frac{1}{2}$ c. is imposed since 1864, must be deducted in order to compare the present price with former years, it is equal to 17 $\frac{1}{2}$ c., gold. The lowest price ever known was 17 $\frac{1}{2}$ c. in 1861; the highest 30c. in 1857. It is exceedingly difficult to form an estimate of the stock and consumption of this year. The Lake Superior mines have probably produced 500 tons more than in 1865, but the Atlantic smelters have not worked steadily. From the Tennessee mines, which promise to furnish an increased quantity of excellent ingot copper, we have received about 1 $\frac{1}{2}$  million pounds. The consumption and production have been for years past nearly balanced, but at the present low prices the Lake companies do not pay, and many will have to abandon mining should there be no advance. Copper is always quoted in currency. It was quoted on the 31st January last 42 $\frac{1}{2}$ c. @ 42, declined in May to 28 $\frac{1}{2}$ c., advanced with the rise in gold to 33 in July, and has since gradually declined.

**LEAD**—has been quiet at 6 $\frac{1}{2}$ c., gold, for ordinary foreign. A few small parcels have been sold for one-eighth less. The manufacturers have been supplied by their own importations, and particularly the White Lead factories are well stocked. The importations for the year amount to 27,150 tons, against 13,600 tons in 1865. The consumption in the Eastern and Northern States has been larger than in 1865, but the increase in the deliveries has been mainly occasioned by shipments to the West, where the production from the Galena mines has materially decreased. Since September the demand for the West has ceased.

**OVER THE SUMMIT.**—The Central Pacific Railroad Company are making arrangements to haul 3,000 tons of rails over the Summit the present season, on runners upon the snow. A sufficient quantity of rails will be thus pushed forward to lay the track early the coming spring, from Cisco to the Truckee river. As soon as the heavy work at the Summit is completed, this portion of the line being in readiness, the road will be opened to Crystal Peak, Nevada.

**OLNEY & Co.**, Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 315 Montgomery street, San Francisco. no10

**NATURAL CURIOSITIES FOR CHRISTMAS.**—At No. 522 Pine street, E. F. LOQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shell, and Wax Flowers, besides Feathered Birds and Butterflies, for ladies' hats, Shells, Sea-weeds, etc. 24113-qr

**Air Pump for Sale.**—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JONAS ROACH, mathematical instrument maker, 522 Montgomery street. 24113-9p

**Favorable to Inventors.**—Persons holding new inventions of machinery and important improvements, can have the same illustrated and explained in the Mining and Scientific Press, free of charge, if in our judgment the discovery is one of real merit, and of sufficient interest to our readers to warrant publication.







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Union* of Feb. 9th: We saw, the other day, some fine looking quartz from the Rhode Island claim.

At Boulder Hill, Wade and Harper have been working away all winter in the old Scott's Hill Consolidated Tunnel, and have, we learn, this week struck into the west wall of the Pioneer ledge.

From the *Silver Mountain Bulletin* of Feb. 2d: At the George Washington mine an addition is being made to the mine house, so as to accommodate at least thirty men; and a shaft is being put down, so as to commence stoping, forty feet beneath the second level.

## Amador County.

From the *Ledger* of February 9th: The Garibaldi mine, located near Jackson, is now being thoroughly prospected by Mr. E. Marvin, who represents a company in Buffalo, N. Y. He is making good progress, and in a few days will have some of the rock crushed.

On Wednesday last we were shown substantial proof of the value of the Oneida mine, in the shape of 270 ounces of retorted gold, valued at \$4,500; the result of fourteen days run with twenty stamps, and taken from less than 300 tons of rock. The mill is one of the most perfect in this section of country, and in a few days twenty additional stamps will be put in operation.

Letter from Velcano to the *Times* says: Last month the Golden Gate company took out, with their 10-stamp mill, \$6,400 in a run of fourteen days. Other companies are doing nearly as well. The best quartz section of this region is on Sutter Creek. The Hayward mine is producing as well as ever. The Railroad Quartz company are developing a very rich vein. On the 5th, this company cleaned up \$2,900 from 125 tons of rock. The Mahoney Brothers have an excellent gold-bearing quartz vein forty feet wide. A. H. Reese intends building a new mill on his claim, two miles above town. Messrs. Meader & Co. are running their mill on sulphurets saved at the other mills of the county. The Oneida claim, on the 5th, after a run of two weeks, cleaned up over \$5,000. The mill on this claim had then twenty stamps, now it has forty. Hereafter the company expects to clean up \$20,000 per month. Mr. Downs recently sold one-tenth of the Railroad claim to J. Bartlett for \$3,000. A few days later he disposed of another tenth to Messrs. Bruin & Newman for \$4,000. Still later the last named parties purchased a third tenth interest for \$5,000.

## Calaveras County.

From the *Chronicle* of Feb. 9th: Hepburn & Co's mill, at Railroad Flat, is again in active operation. Work is being vigorously prosecuted on all the claims in that locality, and there will be no lack of rock to keep the mill constantly employed in the future. The good pay obtained from the quartz taken from the New York lead, has had a stimulating effect on the miners in that section.

Angels is one of the most flourishing villages in the county. The Angels Quartz Mining company have erected one of the finest mills in the State on their lead, and have already commenced crushing. The battery consists of thirty stamps, and the mill is supplied with all the latest improvements in machinery for saving gold.

The tunnel to drain Vallecito Flat will be completed in March. It has cost thirty thousand dollars.

Several quartz mills are being erected at Carson Hill. At Murphy's considerable hydraulic mining is being done in close proximity to the town, and a number of quartz lodes are being prospected in that vicinity. Goodell & Co. have developed a very promising lead, and are engaged in building an arastra, which they contemplate having in operation soon. We were shown some very fine specimens of gold-bearing rock taken from the celebrated Silver Elephant claim, near Murphy's. There are a number of other claims being worked in that locality with the most flattering prospects of success.

## El Dorado County.

From the *Placerville Courier* of Feb. 9th: We learn by letter of date January 30th, that Dugan & Graham have struck a very large deposit of gold near a quartz ledge at Latrobe. They are washing the dirt from around the ledge, and think they have already taken out fifteen to twenty thousand dollars, though at work but a short time.

Steeley's old lead, near Grizzly Flat, has recently been sold to New York parties, who

are prosecuting work with vigor, being already down 140 feet. The rock from this lead was worked with an arastra from the surface down forty feet, and yielded over a million of dollars under the management, and the rock which they are now working is richer than any yet taken out. They intend to erect a large mill as soon as the weather settles.

## Kern County.

From the *Havilah Courier* of Feb. 2d: In the Hayt mine (Gen. Grant) the tunnel is in over 800 feet. The company have struck a 2-foot ledge of very rich rock. They have on hand a large lot of quartz, which they will commence crushing as soon as the roads will admit of the hauling of fuel to the mill.

Several of the owners of undeveloped ledges in Clear Creek district, are commencing upon the work of developing their claims.

In Mt. Sinai district (Kelson) the Pettus company realized \$2,400 in bullion from a crushing of eleven tons of rock, on the Roger's mill. The rock was taken from the Hamp. Williams' lode. The company have several hundred tons of rock from this mine ready for crushing, which is believed to be very rich. The company's mill will soon be in running order.

We hear of rich discoveries having been made lately in the Caliente district. It is rumored that a joint steel company has been formed in the Eastern States to open some of the mines in the district, and that the work will soon be commenced. Mr. McKeadney has again commenced work on the Delphi mine. Marsh & Co. are running their mill night and day, crushing rock from the Venus mine, and are realizing exceedingly well. At the present time there is a scarcity of hands in our mining districts. Good miners are in demand.

## Mariposa County.

Gentry's Gulch correspondence of the *Mail* says, Feb. 9th: H. Coward's mine is being worked through tunnels, an upper and lower one, which are about seventy-five feet apart. The lower one does not give to exceed two hundred feet upon the vein to its outcrop. Above his present level there is ore for about a year's crushing. This mine is one of those which have furnished rich "pockets." This term, by the way, is one often used with regard to Mariposa mines. But the notion is absurd. It is only from the manner in which they are and have been worked that the conclusion has been arrived at. It now rests with the miners themselves to show to the world that their quartz veins are continuations of pockets in their chimneys of ore. Let them take the courses between what they have heretofore called their pockets, classify the ore, examine and determine its width from side wall to side wall—take their general course—then they have the direction in which their chimney of pay ore runs. By following it, they would, in a short time, astonish the pocket men, by showing to them the richness of Mariposa's chimneys of gold-bearing ore.

Letter to same from Bull Creek has these items: Messrs. Davis and Loomis are sinking on a large vein and taking out some fine ore. Messrs. Munn, Lamb and Shumate are quite sanguine. The small amount of rock taken out glistens with gold, and much of it, upon pounding up in a mortar, literally hung together with golden threads.

Messrs. Jenkins, on the main Merced, are crushing rock with, I believe, satisfactory results. Higher up on the main river, the Ferguson Bros. are taking out large quantities of excellent ore.

In the vicinity of Coulterville quartz mining is being prosecuted with vigor. The Bell McGrew mill is in successful operation.

From the *Gazette* of 9th: In our last week's issue we published an item, stating that the Lafayette company, in Hunter's Valley, had suspended work on account of scarcity of wood at the mill, and owing to water in the mine. The Secretary says the mine is still in operation. The mill has stopped for the purpose of putting in more machinery. They will be able to start up the mill again in the beginning of the week.

Frank Lewis discovered a piece of gold, last week, on his "diggings," on Frank Lewis' crossing, which weighed five ounces. This week he found another in the same locality weighing fifteen ounces.

## Mono County.

Seventeen hundred pounds of silver bullion from the Cornucopia mine, in Blind Spring district, arrived in this city a few days since.

## Nevada County.

From the *Transcript* of Feb. 12th: We understand that a rich strike has been made in Jacobs & Sargent's Green Mountain cement claims at Quaker Hill. The bank of cement is from ten to twelve feet in thick-

ness, and a car-load taken from the bedrock is estimated to contain from fifty to one hundred dollars. A mill was built on this claim last fall, and since that time the owners have been engaged in opening the claim. This rich deposit was struck on last Friday, and the gold is scattered in profusion all through the mass.

From same of 13th: Allison Ranch is quite dull at present, but a small number of men are employed in the mine, all work being suspended under ground, except what is necessary to keep the mine free from water. The mill is kept constantly at work crushing the tailings, an immense quantity of which are collected below the mill and they pay well for a second working.

At Forest Springs, the old claims have been steadily worked and a number of new ones have been extensively prospected. The mining prospects of the place are said to be exceedingly encouraging.

We learn that the miners at French Corral are doing finely. Bird & Smith, after a run of twenty-one days, cleaned up a little over \$5,000. There is some talk of erecting a cement mill in this locality some time during the spring.

In Little York township, at Quaker Hill, Jacobs & Sargent are working several sets of hydraulic claims and the prospect is most encouraging. At Green Mountain, between Quaker and Hunt's Hills, the same parties have just opened on the Blue Lead, and struck first-rate pay. They have a bank ten or twelve feet deep and rich from bedrock to top gravel. At Hunt's Hill several companies are at work and all are doing excellently. Red Dog, which was destroyed by fire last summer, presents a better appearance than ever.

From the *Gazette* of Feb. 6th: Much interest is manifested by the mining population of this county, at the present time, with the prospects of successful mining operations in the old river channels and deep hill diggings.

The success of Craig & Co., who struck the gravel lead on Onestamah Hill, will encourage others to look for it further east. Two or three companies owning claims next above the Nebraska have been endeavoring to effect a consolidation of their interests, and if satisfactory arrangements are concluded, operations will be commenced in the spring. The Harmony and Cold Spring companies are also endeavoring to effect arrangements to open their ground during the coming season.

Same of 8th: Buckman & Currau, in whose claims the explosion occurred some two weeks ago, having succeeded in expelling the gas, have since struck very rich cement. Some of the finest specimens of cement gravel ever found in the county have just been taken from the claims.

The incline in the New York Hill mine is down to a depth of 600 feet, being 290 feet perpendicular, and is yielding from 250 to 300 tons of rock a month. They are having a crushing of 600 tons worked at the Rocky Bar mill. The yield is usually \$35 to \$40 a ton.

Same of 12th: Very rich gravel cement has been struck in the claims of Jacobs & Sargent at Green Mountain.

The Whigham mine is now being opened in the most systematic manner. A new 10-stamp mill is now in course of construction.

Same of 13th: Seventy pounds of amalgam was cleaned up from the Banner mill on Monday, being the yield of six days crushing.

From the *Grass Valley National*: The workmen in the Ophir Hill mine, in running a new drift a few days since, struck a 3-foot ledge, from which \$300 in specimens was obtained. The rock now being taken out shows well in sulphurets, and will average from \$30 to \$40 per ton.

EXCELSIOR.—From the *Meadow Lake Sun* of Feb. 9th: The mill of the Golden Eagle company started on Monday last.

The Gold Run company recently struck rock richer in free gold than any heretofore found in their mine.

## Placer County.

From the *Herald* of Feb. 9th: The abundance of rain that has fallen, causing the ditches to flow full, has given the miners a fine chance for hydraulic mining. We predict a successful mining season in Placer.

From the *Dutch Flat Enquirer* of same date: The Summerset claims are now in full operation.

## Plumas County.

From the *National* of Feb. 2d: Crescent mill is again in full blast. The new dam at Round Valley is nearly finished. Jenkins & Kellogg have put up a 16-stamp quartz mill below the dam.

Premium ledge, at Plumas City, is again being worked. The company are taking out rock as rich as ever, and in sufficient quantities to keep their 24-stamp mill run-

ning. We understand that the returns are about \$1,000 per day.

The upper claim of Bass & Reynolds, at Black Hawk, is being worked with success. The company have commenced cleaning up the bedrock. The prospects are most flattering. The claim of Reynolds & Madden is paying good wages.

## Shasta County.

From the *Courier* of Feb. 9th: At French Gulch, the placer mines are yielding better than usual, and money is plentiful. Some of the claims on Church Hill are paying splendidly, one company taking out as high as \$75 per day.

The Mammoth Company are to remove their mill to the Harrison lode at Quartz Hill. Clear Creek ditch is now in good running order.

The present season has been a propitious one for the miners around Buckeye and Chumtown.

The owners of the second extension of the Red Warrior lode, in the South Fork district, are making preparations to commence work.

The claims owned by Robert Pitt and others, Portuguese Flat, are paying well this winter. A back channel has been found which prospects very rich.

## Sierra County.

From the *Dovnieville Messenger* of Feb. 9th: The Oak Flat Mining Company have lately let a contract for running their tunnel one hundred feet. After a run of fourteen days of the Slug Cañon quartz mill, a clean up gave \$1,017. The Empire Mining Company, at Goodyear's Bar, (Bates & Co.) are taking out from six to eight ounces per day, with six hands. The McCormick boys are about opening the old New York gravel claims at Alleghany.

The Twenty-One Company are taking out rich rock, and will soon start their mill. The Green Back and Oak Flat Companies are also doing well. The Union and Pac Similo are at a standstill, but expect to resume operations in a short time.

## Tulame County.

From the *Columbia Citizen* of Feb. 9th: At Gold Hill and Gold Springs several good claims that have been laid up for the winter have been started again. The Shaghae quartz claim pays a handsome dividend.

The claim of Ames & Co. and of Pierce & Co., at Table Mountain, are in successful operation.

At Saw Mill Flat the prospect for lively times is favorable. King & Diamond, in Red Gulch, and still further on, Dunn, Diamond & Co., are realizing first-rate pay. Rowell, Whiting & Co. are receiving large dividends. Currow, Powers & Co's claim stands high as a uniformly paying claim.

## Yuba County.

From the *North Californian* of Feb. 8th: We are informed by Wm. Smith, of Indiana Ranch, that the owners of the Bateman ledge are now having crushed at Templar mill rock which will pay from forty to fifty dollars per ton.

Ten thousand dollars was the amount taken from the Antone claim, Timbuctoo, in fifteen days run.

John Rice, of Indiana Ranch, has discovered on his ranch a very rich deposit of cement gravel, which extends nearly one mile. One pan of dirt prospected \$1.12.

## ARIZONA.

Mr. Goldwater, a merchant at La Paz, arrived in this city a few days ago, and brings late mining news. The new 20-stamp mill of the Vulture Company, at Wickenburg, has commenced running on the Vulture rock, and is turning out bullion in most satisfactory quantities. A contract has been made with a party to haul twenty tons per day of this rock from the mine to Wickenburg. The old 5-stamp mill, now rented by Mr. Chshenbury, is also running, and clearing several hundred dollars per day. On Antelope Creek, at Weavers', the party holding the richest claim is a Frenchman, named Bertrand, who has done an immense amount of labor in preparing for sluicing as soon as the rains furnish water. Bertrand let on a stream of water for a moment to show the richness of the dirt, and Mr. Goldwater then picked out with a pair of tweezers a small paper boxfull of fine large lumps of gold of the finest quality, which he brings with him. He adds that the Apaches stole his mule while he was doing it.

From the *La Paz Gazette* of Jan. 10th. We are informed by Mr. Rountree, who arrived in town on the 15th from Prescott, that the mill of Mr. Woolsey, which is on the Ticonderoga ledge, on an experiment, after refining their quicksilver, cleaned up from seven tons of unassorted rock, \$987 of retorted gold. The experiment was made for the reason that the parties interested believed the quicksilver not to be good. In refining it they discovered that but one-half was quicksilver. The Ticonderoga is prob-



ably as well prospected, if not better, than any ledge in the vicinity of Prescott, to the depth of fifty feet, and shows well.

Same of 17th: The mill of Mr. Noyes on the Unpqua, will probably be in operation in a couple of weeks. It is of ten stamps, and a good mill; and the mine is asserted to be very rich.

#### BRITISH COLUMBIA.

From the *Victoria Colonist* of Feb. 21: Mr. Milby, who left Wild Horse Creek, Kootenai mines, in November, considers that the best mining camp in the country. There were about seventy-three white men and 275 Chinamen wintering on the creek, and all doing well. Every man had money, and business was brisk. There will be a large number of miners there the next season, and it is believed that other creeks in the vicinity will be prospected to advantage.

At Leech River, there were about twenty men mining, who seemed perfectly satisfied, and expressed great confidence in the results of the next summer's work. Our informant tried about three or four pans of dirt from the bench that will be washed away by the ditch, from which he got from ten to fifteen cents to the pan. The gold is very pretty in appearance and of very fine quality.

#### COLORADO.

From the *Colorado Times* of January 22d: Notwithstanding the bad weather of the week past, the Gunnell company's mill will make a good shipment this week to the East.

Certain claims in Russian and Fall River districts have been sold by the Ayres' Mill and Mining Company for seventy thousand dollars.

Colonel F. W. Ford, of Russian Gulch, has gone East to raise capital for the purpose of working the "South American" lode. This is situated on the south face of Republican Mountain, about three-quarters of a mile above Georgetown. When first discovered, it showed a crevice of about six inches. A shaft has been sunk about forty feet, and the seam of ore has enlarged to three and a half feet. The ore has assayed from \$240 to \$2,000 per ton. The owners recently had one thousand pounds of ore crushed by hand and smelted in Watson's furnace, and obtained 250 pounds of metal, which assayed \$780 per ton, equal to a yield of \$273 per ton of crude ore.

From the *Denver News* of January 23d: The new Ni-Wot mill, in Ward District, will soon be in running order.

A communication from James Creek says: The weather is very fine, and prospecting is continued with great energy. Messrs. Grey & Morrison are at work on their smelter with vigor. Great confidence is felt in this enterprise from Mr. Grey's known experience in smelting the lead ores of Wisconsin. Everything pertaining to the district, we are assured, is cheery, and the miners indulge in bright anticipations of what the coming season will disclose.

#### IDAHO.

From the *Owyhee Avalanche* of Feb. 2d: Tunneling on a large scale will form an important branch of prospecting and mining the coming summer. The Cosmos, New York, and Owyhee and Iowa companies will each run extensive tunnels in addition to their usual mining operations. We learn that estimates with a view to let contracts are now being made.

L. J. Lewis, Esq., superintendent of the Silver Glance Mining company, arrived from New York on last Saturday. He has business connections with the Cosmos company, and his operations will extend to Flint district. The company which he has organized at the East owns several very rich ledges in Flint district.

Letter to same from Lembi has the following: There have been claims opened and worked for a distance of about sixteen miles—some paying two ounces and many more a great deal less. John Aikman & Co. last week took out nearly \$300 on a bar on Ward's Gulch, which is good pay. The principal gulches here are Ward's, Smith's, Webfoot, Jackass, Wright's, Nip-and-Tuck, and Nappy's Creek, in this district. We have four other districts located round here, but I am not well enough posted to name the gulches accurately; all have claims opened and men waiting for spring. There are now about 350 men wintering here, and more coming every day. We have two towns—one called Leesburg and the other Grantsville, with about thirty houses finished and a hundred more on the way.

From the *Idaho Times* of January 25th: The Messrs. Smith—owners of the Laudon ledge—are meeting with unexpected success. Six weeks crushing has yielded more than was actually expended in six months labor in its development. Work in several of the ledges is being pushed forward. The Gambrianus, Illinois, Landon and others,

have men engaged in extracting ore. Tunnels in the immediate vicinity of Idaho City are not worked at present.

#### MONTANA.

From the *Post* of Jan. 19th: We were shown some very fine specimens of argentiferous rock from a lately discovered lode in Jefferson county. The ledge has been named the "Argentum," shows a width of eight feet at a depth of only thirteen feet, and promises fair in silver.

A new gulch was lately discovered about two miles from this city, which, from present appearances, will prove pretty rich. The gulch is named Jones' Gulch, is situated two miles east of Big Indian, and empties into Prickly Pear valley. It is four or five miles long, about fifteen feet to the bed-rock, and the prospects are good for a big thing next season.

The 10-stamp mill of Judge Turnley, situated in Grizzly Gulch, since its commencement of operations in the latter part of June last, has cleaned up \$42,000, being an average of \$7,000 per month. Taking into consideration the disadvantages under which this mill has labored, some of the time being unable to run but half the stamps, it must be confessed that it is good work. The rock crushed was from the Park & Whitlatch Union lodes, and the biggest clean-up was eleven thousand dollars for ten days' running.

The Virginia and Nevada Ditch and Fluming company have consolidated with the Alder Gulch Fluming company, and propose commencing operations as soon as the weather moderates. Mr. McEvily and others have about completed arrangements with capitalists for the purpose of constructing a ditch from the Passamari river to Alder Gulch, large enough to carry four thousand inches of water, for the purpose of fluming Alder Gulch. This ditch, it is estimated, will cost \$200,000, and will pass over miles of ground which prospects well, but cannot now be worked for want of water.

Letter to same from Doer Lodge says: The claims which are opened pay from ten to fifty dollars per day to the hand. Claim-holders will pay from six to eight dollars per day, wages, in the spring. Work will commence some time in the month of March. As to the quartz lodes, they have proved to be rich without a doubt. The Porter Bros. & Co. have put up a smelting furnace, and run out several thousand pounds of metal.

From the *Herald* of January 10th: Rich diggings have been found in Christina Gulch, about two miles from Helena, from which one nugget weighing 14½ ounces was taken.

Many believe that the gold placers, of which Helena is the center, are the most extensive ever discovered. The immediate gulches—Last Chance and Dry—comprise but a very small portion. Almost every gulch, for sixteen or seventeen miles in the direction of Virginia City, contains paying ground; water—which will be at hand this year—is only needed to make them alive with mining enterprise.

New diggings have recently been discovered between Indian and Beaver creeks, about thirty miles from Helena. The diggings are said to be unusually shallow, and so rich that with the necessary water miners will realize their fifty dollars a day without any unusual exertion.

#### NEVADA.

##### Black Rock.

From the *Sage Brush* of Jan. 19th: Wm. Kingsbury has just arrived from the mines, and reports all the boys in good spirits. Prof. Robinson, the assayer, is taking out large chunks of bullion. The mill is all ready to run as soon as Mr. Evans arrives with the salt.

A small quantity of rock from the Emerald ledge, Chico Company, worked by Mr. Ward, shows immense results in gold and silver.

We were also shown by Mr. Ward, a small piece of High Rock ore, worked by the smelting process, which was literally covered with silver. We are fully of the opinion that there will be more bullion taken out in the Black Rock country next season, than in all the balance of Nevada.

##### Humboldt.

From the *Register* of Feb. 2d: Last week's *Register* spoke of the Oreana smelting works as temporarily suspended, while making improvements in the works. We are informed that no suspension has taken place. While rebuilding a furnace which has burnt out, the other furnaces are kept going.

The Utica Mill and Mining Company is progressing finely with the erection of mill and other works at the lower neck of Humboldt Lake. Teams are constantly hauling the material out.

##### Pahranagat.

From the *Reveille* of Jan. 23d: W. B. Cogswell came through in fifty-seven hours traveling time from Pahranagat to this city.

He informs us that tests of the best ore from the Illinois ledge, show it to be worth \$200 per ton. The district is more fully supplied with water than was at first supposed. A 10-stamp mill had arrived at El Dorado Cañon by the river, and was being hauled to Pahranagat by the way of Callville at twelve cents per pound. Dr. Congar has also a 5-stamp mill at the cañon, which will be hauled through shortly.

##### Reese River.

From the *Reveille* of Feb. 2d: The Manhattan mill is now working on North Star ore, and with great success. We saw the other day, some twenty-five tons of very rich selected ore in the company's storeroom. It is extremely friable, and crumbles on exposure to the air. Mr. T. F. Gould, the Consolidated Company, arrived from Hot Creek yesterday afternoon. He informs us that the first lot of bullion produced by their mill, amounting to some 2,000 ounces, is on the road to this city. Work on the mines in the district is confined at present to the Old Dominion, Keystone and Susquehanna. The ore from which the bullion was obtained was taken from the first named ledges, and was reduced without roasting. This mode of treatment is not advantageous, and he is now engaged in erecting furnaces for the mill of the company.

Two tons of ore from the Reveille district arrived yesterday. It is from the Augusta, Santa Fe and Crescent ledges. It is estimated to be worth from \$250 to \$500 per ton.

The Burning Moscow, in Cortez district, has just been developed at a thickness of sixteen feet. The ore is of fine quality.

From same of 5th: We recently visited the Florida, one of the Lander Hill "shoe strings," and brought away some very beautiful and valuable specimens. According to the calculations of Superintendent Sherman, the mine will yield \$15,000 during the present month, while the work of pushing down the incline will keep pace with stopping out the ore.

Same of 6th: Yesterday the Austin and Belmont Company's stage brought in five bars of bullion valued at \$4,766, from the mill of the Twin River Mining Company.

An assay made yesterday of pulp obtained from ore of the Reveille district gave a yield of \$143 of silver per ton. The ore was taken from the Mammoth Crescent ledge.

Same of 8th: The Mount Tenabo Company returns as the production of the Cortez Giant ledge for the last quarter of 1866, 450 tons, averaging \$61 per ton.

Some fine specimens of ore now in town, from the Phœnician ledge, Bunker Hill district, show an abundance of free gold.

In Hot Creek district, one company is developing three ledges on Keystone Hill, called Pilot Knob, Clipper and Alta. The ore from the Pilot Knob, tested at the Keystone mill, yielded at the rate of \$148.27 per ton; from the Alta, \$54.03.

Letter from Belmont to the *Territorial Enterprise* of Feb. 9th, has the following: In the Highbridge, the Combination Company have again struck the ledge at a distance of 230 feet from the mouth of the tunnel. The richness of the ore in this ledge is not a matter of speculation. The company took eight tons from the croppings where they have exposed the ledge; from this they assayed two tons of first class ore, and four more tons of second class, and sent it to Austin to be milled. The two tons yielded \$1,243, and the four tons \$657.

A postscript says: I have just seen a gentleman from the "Spanish Belt," where he has been prospecting for a lead located by some Mexicans, about eight miles westerly from here. He informs me that his company has struck ore of the very highest grade. He is confident that he can take out twenty tons per day, which will mill \$200 per ton, had he the means with which to employ men.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Feb. 8th: Since the recent strike of water in the Colorado tunnel the air has been so bad that work in it could not be prosecuted, but an air tube has now been laid in the tunnel—which is 1,600 feet in length—and all difficulties in that respect obviated. Work is to be at once resumed.

The old Eclipse hoisting works at Gold Hill are being taken down and removed, on account of the caving of the foundations. When the removal is completed, we learn that it is the intention of the company to take out the surface ore for milling.

The east drift of the third level of the Kentuck mine, we are informed, day before yesterday, cut a vein of pay ore averaging seven feet in width, and of a character

which will doubtless pay well. The mine throughout looks excellently well.

Same of 9th: The sinking of the Bonner shaft of the Gould & Curry company is still being energetically prosecuted, about a foot a day being the progress made. Were it not for the great depth—750 feet—and the amount of water to be contended with, it would of course be sunk at a faster rate. No extensive bodies of good ore are found at the lower levels, but the upper portion of the mine and the surface workings still continue to yield goodly quantities of excellent pay ore. The Curtis shaft of the Savage company is now 535 feet deep, but the further sinking of it has ceased for the present, the machinery not being in working order. The big shaft of the Chollar-Potosi company is 700 feet deep, but not being sunk any deeper at present. The Ophir-Mexican shaft is 621 feet deep, and from near the bottom of it a tenth level is being opened to the Ophir mine.

Same of 10th: The Granite mill, at Upper Gold Hill, is again at work reducing ore. . . The Overman mine is still being actively worked. . . The south shaft of the Yellow Jacket is being sunk for a new level. . . At Gold Hill all the dumps are full of ore, and teams are again busily engaged in hauling to the mills. . . J. D. Andrews have collected several millions of tons of the tailings from the Comstock lode, which have heretofore been allowed to run to waste down Gold Cañon.

From the *Virginia Union* of February 4th: The Granite mill, one of the old Pioneers of Gold Hill, started up this morning and worked to a charm. This mill has ten stamps, with an adequate number of pans, settlers and agitators. The engine is of the Corliss pattern, 50-horse power, and runs the whole mill with ease with steam generated in a small-sized tubular boiler. It will reduce ore from the Confidence mine, which is situated directly west of the mill.

From the *Tribune* of Feb. 8th: The survey ordered in the Savage mine was proceeded with for two days. Admittance was then refused. An order restraining the U. S. Marshal from entering the mine is now being argued. Yesterday afternoon the Savage company ceased work, the fires in the furnaces were extinguished, the cages deposited mid-way in the shafts, and the entire machinery is being repaired, the reason being given that too large an amount of ore has accumulated at the dump. The whole affair excites a lively public interest, and a great many jokes grow out of the ease as it progresses. It is a vulgar belief on the streets that the Savage works will be in order for resumption of active operations about the time Judge Baldwin's Court adjourns.

Same of February 9th: The new shaft of the Hale & Norcross company has reached the depth of seventy-five feet. The dimensions are seventeen feet six inches long by seven feet six inches wide, divided into three compartments, with a pump shaft, and timbered in the Cornish "set" style with 12x15 stuff.

From the *Gold Hill News* of Feb. 5th: The amount of treasure shipped from the Imperial mine during the month of January was \$115,940. Although this has been the worst month for the hauling off ore, this is the largest shipment ever made in one month from this mine.

There is at this time, out and ready to be taken away, at the different mines in Gold Hill, not less than twenty thousand tons of ore. If the roads will but improve so that the teams can haul away the ore, there will be enough to run all the mills in the country steadily for the next six months before they can catch up. If the mines of Gold Hill do not look promising at the present time, then they never have done so.

#### NEW MEXICO.

A correspondent of the *Denver News*, writing from Taos, Jan. 11th, says: The prospects for mining around Taos are very good. We have now here two miners, returned from Montana this fall. Eugene Littlellier and Gabriel Parrot, who have been prospecting in the mountains, near Taos, and arroya Honda. They washed gold in several places, and got as high as ten cents to the pan. There is no doubt but our mines will pay rich. The only thing we need here is an industrious population. Messrs. Parrot and Littlellier washed only the dirt taken from the surface.

A DIFFERENCE OF ONLY TWENTY-FIVE THOUSAND YEARS.—The bones recently exhumed at Cohoes are already bones of contention. Professor Hall of the New York State Geological Museum, says they are the bones of a mastodon. Edward Maguire, of Saratoga, says they are those of a show elephant that died there about forty years ago. "Who shall decide when doctors disagree?"



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. Thomas Starr is Agent for the Mining and Scientific Press in Nevada, and will canvass the principal cities, towns and districts of that State. August 26, 1866.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

Mr. S. D. Whitaker, is our authorized Traveling Agent and Solicitor from this date. Jan. 1, 1867.

## San Francisco:

Saturday Morning, Feb. 19, 1867

## Notices to Correspondents.

**ALPHA—FORCE IS DEFINITE IN QUANTITY AND INDESTRUCTIBLE.**—These points may be proved in various ways—a few of the most simple examples must suffice. For instance, a pound of charcoal, when burned with a free supply of air, combines with  $2\frac{1}{2}$  pounds of oxygen, and produces  $3\frac{1}{2}$  pounds of carbonic acid. The chemical action produced by this combustion is accompanied by the evolution of a definite amount of heat, which heat, if it is applied without loss, is sufficient to convert  $12\frac{1}{2}$  pounds of water at  $60^\circ$  into steam at  $212^\circ$  Fah.; consequently, when charcoal is burned, there must, necessarily, be brought into action a definite amount of power; only varying in the proportions, similar calculations may be made with other substances which are combustible in the atmosphere. The quantity of electricity associated with a given quantity of matter, is equally definite. If a piece of amalgamated zinc is placed in voltaic relation with a plate of platinum in dilute sulphuric acid, for each pound of zinc which is dissolved a quantity of electricity is liberated, by means of which a pound of metallic copper may be separated from the solution of a sufficient quantity of sulphate of copper, or 3-2.5 pounds of silver may be reduced from a solution of nitrate of silver. The heat developed by the combustion of charcoal may be employed to produce motion, and thus motion may be again employed to produce heat, as Joules' experiments establish the fact that the quantity of heat developed is exactly proportioned to the amount of motion employed for this purpose.

**MATTHIAS CORVINUS.**—The curious and very interesting machine you allude to, exists at Schemnitz, in Hungary, where a part of the machinery for working some of the mines consists of a perpendicular column of water, 260 feet high, which is made to press upon a quantity of air inclosed in a strong and tight reservoir. The air becomes greatly condensed by the superincumbent column of water, which is equal to the pressure of eight or nine atmospheres. When a pipe communicating with this reservoir of condensed air is suddenly opened, it rushes out with extreme velocity and instantly expands; by so doing it absorbs so much heat, that it freezes the moisture contained in the issuing and surrounding air, and temporarily forms a miniature snow-fall, which can be gathered on a hat held in the blast. The force of the issuing current is so great, that the workman who holds the hat is compelled to lean his back against a wall in order to retain his position. The principle, of which the above is a description of a practical example, has been recommended for the purpose of cooling the atmosphere of rooms in tropical climates, and even to form ice. For the latter purpose, however, the superior expansive power of ammoniacal gas appears more likely to come into general use.

**GEOLOGICAL SURVEY—MINING STATISTICS.**—A Washington telegram, dated Feb. 7th, says: "On motion of Conness, the Secretary of War was directed to have a geological survey made of the territory between the Rocky Mountains and Sierra Nevada, on the route of the Pacific Railroad. Also, on his motion, five thousand dollars was appropriated for the collection of statistics on the subject of mines and mining."

## Blasting by Electricity.

One of the most useful purposes to which electricity is applied, is that for blasting in mines and quarries, and for submarine operations of a similar character. This novel use of the electric spark, was first introduced into the mines by Martyn Roberts. The first to apply it to submarine operations was Major-General Pasly, who employed it for blowing up some sunken vessels in the Thames river. The General commenced his operations by the use of a long fuse, inclosed, in connection with the charge of powder, in a tin case. His friend, Mr. Palmer, suggested the use of electricity, to be conveyed by insulated wires. The General promptly adopted the suggestion, and it was first employed in removing the wreck of the Royal George. From that time electricity began to be generally used for such purposes.

The advantages of blasting by this agent are numerous and important; one of the chief of which is the increased effects derivable from a given amount of powder, from the fact that no pressure is removed by the vent formed through the tamping, by the burning of the safety fuse. Careful estimates have shown that at the instant of discharge there is a pressure exerted of 200 atmospheres. In the hundredth part of a second thereafter, and before the impact can be communicated to the rocks to be ruptured, there is a decrease in the pressure of fully twenty-five per cent. by the escape of gas through the hole left by the fuse. The excess of powder thus required, also calls for the drilling of holes proportionately larger, and of course at greatly increased expense.

Another advantage of electric blasting is dependent on the fact that the heat is not applied till the instant it is wanted, and then the explosion is instantaneous; whereas, in the employment of fuse, it frequently takes place after it is expected, and not unfrequently when the workman is imprudently approaching to learn the cause of delay, from which cause accidents are of frequent occurrence. Less powder is required for an electric blast, and less smoke is produced. Moreover, a series of blasts can be instantaneously fired by electricity, producing a much greater effect than a series of blasts with fuse, the explosions of which cannot possibly be made to act instantaneously.

As to the economy, safety and efficiency of blasting by electricity, there can be no possible doubt, when any considerable amount of it is to be done. Its employment in mines is especially desirable. For submarine work it is now considered indispensable. The process and manipulation required for this mode of blasting is easily acquired by any person of ordinary intelligence. Any person who can be safely trusted with the use of powder, ought to be able to comprehend all the requirements necessary for blasting by electricity. A perfect understanding of the use and care of a properly constructed battery, ought to be acquired by any person of ordinary intelligence in a few hours' practice. The method of charging the hole and connecting it with the battery, is the most delicate and intricate part of the work; yet, when once understood, it is extremely simple, and requires nothing but care and attention. There is an absolute immunity from danger, except in case of the most gross carelessness. The usual danger from tamping is of course always present, but it is in no way increased by inserting the electrical wire in the charge, which is made of copper, except the half inch or so for making the connection, for which a fine platinum wire is usually employed. So long as the two battery ends of the wire are disconnected with the battery, it is impossible for the electric spark to start on its mission.

Electricity is now quite generally employed, both in Europe and in the Eastern States, for heavy blasting operations, and wherever introduced it gives the fullest and most complete satisfaction. In our next we shall give a description of the kind of battery to be used, the *modus operandi*, etc.

## A Brilliant Meteor.

A meteor, or aerolite, of unusual brilliancy and size, was seen in the horizon to the northwest of this city, about a quarter past five P. M. on Monday last. It passed rapidly in a southeasterly direction, at a descending angle, until lost to view below the horizon. A few seconds after its disappearance, a dull heavy sound was heard in this city, like the report of a distant cannon.

The same meteor was seen at Petaluma, Haywards, Stockton, Gilroy, San Juan, Monterey, Santa Cruz and Nevada City. All accounts agree in the direction which it took, and to its general appearance. It described, as near as can be judged, the same track taken by the great meteor of July 12th, 1865. Both meteors occurred during daylight—the one on Monday last just before sunset, and the one in July, 1865, just after sunset, but before dark. Both were first seen at about the same point; that of 1865 was traced to the southern portion of Tulare Valley. The present one has thus far been traced only a short distance below San Juan; but when last seen, so far as heard from, was making its way direct for the southern portion of Tulare. We may yet hear of it there.

There must have been several explosions. The one heard in this city could not have been the same as that heard at San Juan, Monterey, etc. The sound reached this city within a few seconds after the meteor disappeared. The explosion heard from the south of San Juan, if it could have reached this city at all, could not have been heard here until fully seven minutes after the meteor had disappeared.

When an aerolite enters the earth's atmosphere, it leaves the inter-planetary space at a temperature, as an evening cotemporary remarks, from  $250^\circ$  to  $350^\circ$  below Fahrenheit's zero, but it does not condense, as the same paper remarks; it expands slightly by the heat suddenly generated from atmospheric friction, and this sudden expansion causes fragments to fly off. It is the sudden parting with these fragments which causes the detonations which accompany such phenomena.

The detonation heard here was most probably given off before the aerolite had moved a dozen miles south of this city, and while it was passing over the bay, into which some of its fragments doubtless fell. The loud report heard at San Juan, and vicinity, would indicate a very considerable fracture, perhaps sufficient to destroy its momentum and bring the entire mass to the earth in fragments. The mass of this meteor was undoubtedly quite large. It appeared to observers at Nevada City, at least 150 miles distant from its path, as large as a 24-pound cannon ball. It must have been very luminous to have been visible in the presence of the sun.

**THE MINING LAW.**—Messrs. Stewart and Conness, the Pacific Senators on the Mining Committee, do not deem it advisable, says a Washington letter of January 13th, to advocate further legislation on mining matters during the present session. They think the operation of the law passed at the last session should be fairly tested before the question is further discussed. We shall in our next issue publish the instructions recently sent by the Commissioner of the General Land Office to the local land offices.

**CONCENTRATORS.**—Parties interested in this class of mining machinery will find in the advertising department of this paper a new engraving, giving a sectional view of Hendy's latest improved machine, together with directions for working the same. We hear that this concentrator has been adopted at Grass Valley, and is meeting with success.

**RICH STRIKE.**—The Hope Gravel Company of Grass Valley, has struck a stratum of gravel between four and five feet thick, a pan of which was washed, and yielded fifty cents worth of gold.

## Reminiscences of Arizona.

The first mining district organized in Arizona Territory, by Americans, was called "Colorado." It is located on the west bank of the river of that name, 550 miles above its mouth. It is twenty miles square—the Colorado river forming its eastern boundary. For a distance of eleven and a half miles through the center of this district runs a deep and wide gorge, well known as "El Dorado Cañon."

## ITS DISCOVERY.

In 1861 a party of Californians, from Nevada county, set out to explore the then unknown regions, in the vicinity of Death Valley. About 100 miles southeast of that terrible valley, they came upon a series of mineral lodes, which were found to be galena and of a very high per cent. Some of them were found to assay as high as \$70 per ton in silver. This party organized a district, and named it Potosi; part of the rest went to work prospecting the lodes, while the rest of them started for supplies. They arrived in Los Angeles, made known their discoveries, and immediately returned with a new outfit, followed by a large number of adventurers. Soon after they arrived at the mines, an old Indian came into the district and informed the miners that in *three sleeps* he could take them to where there was plenty of gold. Five of the miners agreed to follow him, and after three days of hard travel over high mountains and through deep gorges to the southeast, they struck the head of what is now called El Dorado Cañon. Traveling down the cañon a short distance towards the Colorado river, the Indian led them up into some high rocks and showed them large masses of *bright sulphurets of iron*, which he supposed to be gold.

Upon looking around, they found they were in the heart of an immense mineral region. Silver and gold lodes of great width and very rich, could be found on every side of them, the most important of which they at once located. They also found very good copper ore, galena and iron; also beds of alum and a number of beautiful springs of water, at different points in the cañon.

In the Arizona Miner of June 27th, 1866, we find extracts taken from a letter written to the *Alta California* by Frank S. Alling, Postmaster at El Dorado Cañon, in which he says that up to 1865, there were recorded in that district 760 mineral lodes, and 850 mining deeds. El Dorado Cañon claims the honor of building the first quartz mill in Arizona Territory. There were some smelting works and arastras put up in Southern Arizona. Lieut. Mowrey undertook to get an engine and crushing machinery in 1852; but a part of the machinery only arrived. The boiler was left in the desert, where, for ought we know, it still remains, a mortal terror to the Indians, who supposed it to be a huge cannon.

Now, after a Rip Van Winkle sleep, rendered necessary by Indian hostilities, difficulties of communication, etc., this noted mining district is waking up. Government is helping the miners out in the way of protection from the Indians. A permanent fort is being built at the mouth of El Dorado Cañon, and is to be garrisoned by Co. D, 9th U. S. Infantry, Capt. Yard. This command arrived at the Cañon January 6th, 1867, with one year's supplies. This is the highest fort on the Colorado river, being sixty miles above Fort Mohave.

Now, as this rich district has protection from the Indians, we expect to see capitalists improve the opportunity, and develop some of these noted ledges. A mail runs through the cañon twice a week, from Slat Lake City, Los Angeles and Prescott.

On the 6th of January last, Capt. Rodgers arrived at El Dorado Cañon with the steamer Esmeralda, with supplies, and also two quartz mills for Pahrangat district, northwest of the cañon. This will be the steamboat landing for the above named mines, as there is a fine wagon road between the two points.

Steps are being taken in this city, to start the Colorado mill at the cañon at once; also two companies are organizing in New York to work mines in the Colorado district.



## Government Gas Lighting.

The unpopularity and stubborn inclination of gas companies everywhere, to combine and monopolize, has so aroused the public feeling in Europe, that the municipal governments in many of the cities are taking the subject of gas lighting into their own hands, with the view of furnishing this indispensable article of light to all, at the lowest nominal price. In the city of Prague, corporation gas is now furnished at \$1.75 per 1,000 feet. The private companies have been compelled to come down to the same figure or close up. It seems they can afford to go on, even at that low rate; although they have no hopes of effecting a "combination" with their new competitor.

Schemes are on foot before the English Parliament, looking to forcing a sale of the works of the various London companies to the metropolitan authorities, as a matter of public necessity, in order that light may be furnished at a cheap rate, and abuse and extortion in that direction put down.

Similar movements are also on foot in various directions, both in England and on the Continent. Gas is now furnished in Liverpool for *sixty-seven cents*, and a splendid article at that. In Plymouth, a poorer, but yet serviceable gas, is furnished as low as *sixty-one cents*. There are 157 chartered gas companies in England, and about 600 in this country.

The citizens of New York are beginning to look anxiously to the Legislature at Albany, for the means of securing cheap light for that city. The feeling is such that the gas companies will either have to give up their enormous profits, or lose the value of their property entirely. The public are calling for more light, and are determined to have it, and cheaper, too. It can and should be so furnished. If no other means can break down the combinations of capital, by which the poor are compelled to pay more than a fair equivalent for that which they must have, and yet which must come from associated capitalists, it is the duty of the proper authorities to see that public steps are taken to provide for the necessity. In this there need be no improper conflict between labor and capital, in the proper sense of that idea.

What say the citizens of San Francisco? There is no question but that we might and should have cheaper light in this city, and better than that now furnished. It appears that the experiment of a "Citizens' Company" is not the way to get it; capital is too powerful. Some other way must be devised.

## HYATT'S HAND-BOOK OF GRAPE CULTURE.

H. H. Bancroft & Co. have laid upon our table a copy of this work. It is a neat volume of some 275 pages. The author, T. Hart Hyatt, has spent several years abroad, in different countries, and has come to the conclusion that California presents more favorable prospects for the successful culture of the grape than any other part of the world. The book professes to be a complete manual, with instructions for the management of the grape and the manufacture of wine, and is especially designed for California. A very full list of the most esteemed varieties of European grapes is given. European and California wines are compared. Raisin making is urged as sure to be a profitable business in California, and some directions for it are given. The book contains a considerable amount of valuable information which is not generally found in such treatises.

A STEAM PLOW, which is capable of plowing an acre an hour, twelve inches deep, has recently been sent from England to this country. The price is \$10,000. An overseer is in charge. The Custom House has levied a duty on this sample of nearly \$4,000. Mr. Bidwell offered a joint resolution refunding this, which was immediately passed.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

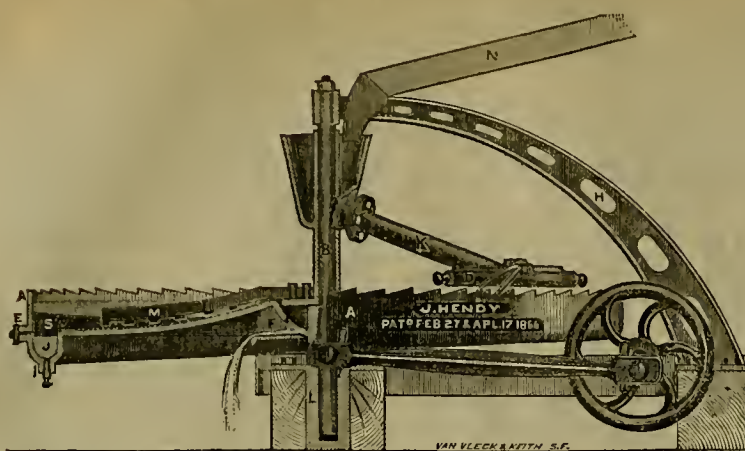


FIG. 1.

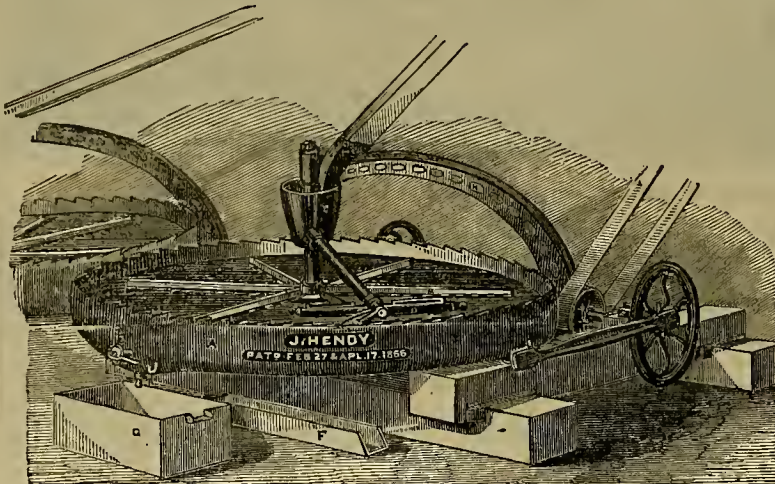


FIG. 2.

## FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

Fig. 1 is a sectional view. H is the support for upper end of shaft, marked B; L is the step; C, the hopper, in which the tailings are thrown; the tailings flow down the arm, K, then distribute at the Distributor, marked D. The tailings enter the pan, A, at its periphery, and the debris discharges near its center, and passes off in the spout, F. The sulphurets discharge at gate E; amalgam and quicksilver at plug I. S is a descending channel, for forcing the sulphurets, amalgam and quicksilver to their respective points of discharge; S is the sulphurets; M, the stirrers, with copper plate coated with mercury. The rotating of the stirrers prevents the sands from packing near the center of the pan, where the motion is diminishing. The pan, A, shows a curvilinear bottom, which gives a more precipitous descent near its center, for the purpose of forcing the sulphurets towards the periphery. It will be noticed that the centrifugal force and motion diminishes towards the center of the pan, for which reason the inclination is increased for the purpose above mentioned.

Upon the under side of the distributor are small openings or perforations, through which the pulp is dropped from the feeder into the pan.

The stirrers, marked M, and distributor, D, is made to sweep slowly around by means of the ratchet teeth upon the upper edge of the pan, in which two pawls are seen to work. This motion is obtained from the vibrating action of the pan. These parts can be so connected, as in Fig. 2, that two can be driven by one shaft and pulley.

The revolving stirrers and rotary distributor can be easily attached to Hendy's old Concentrators, and at a small expense.

These machines have been thoroughly tested, and pronounced a perfect success.

The proprietor of this Concentrator feels satisfied that it has no equal in use. It is designed for saving finely divided Quicksilver, Amalgam and Gold from the sands, and for concentrating and saving the Sulphurets, and is to be placed behind any and all other machines in use. Any person of ordinary experience with Quartz Mills can readily fit them up and run them.

The principle upon which HENDY'S PATENT CONCENTRATOR is constructed, is the only true and mechanical one for the purpose of concentration.

## CENTRIFUGAL FORCE AND GRAVITATION,

Combined as they are in this machine, CANNOT FAIL TO ACCOMPLISH the object sought.

Many certificates from proprietors of mills, who have this Concentrator in use, can be had, if required, giving the most flattering accounts of its efficiency.

A most substantial evidence of its worth is the fact that the proprietor is receiving repeated orders from those who are using them, and who have tested their merits.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit. THEY ARE WARRANTED TO WORK SATISFACTORILY.

## Directions for Operating Hendy's Concentrator.

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:

FIRST—Set the Pan, A, level, by its inner rim.

SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 1, marked S.]

THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.

FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

## CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1864."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,

Union or Fulton Foundry, San Francisco.

Feb. 1st, 1867.

TWENTY-TWO thousand eight hundred dollars worth of gold dust was purchased recently in a single day, by Block & Furth, San Juan, Nevada county.

## City Amusements.

METROPOLITAN.—At this theater the "Sheep's Foot" has been running during the week with good success. It will give place to "Raoul; or the Magic Star" next week. On Friday evening, a benefit of the Independent California Greasers.

OPERA HOUSE.—"The Long Strike" was played here for the first time on Monday night, Miss Kingsbury taking the part of the heroine, Jane Learoyd; Edwards that of Noah Learoyd, her father, and the leader of the strikers; McCullough as Jim Starkie, and Pardee as Riley the sailor. In this piece the effect of a strike, and its results to the strikers, are strongly portrayed, and many of the scenes are highly interesting. In that of the telegraph office, the messages are actually sent over the wire, as a practiced ear will readily detect. The character of Noah Learoyd is finely personated by Edwards, and Miss Kingsbury and McCullough, though their parts are of less interest are very good. The part of an impulsive Irish sailor is well taken by Pardee. Altogether the piece, though not highly sensational, possesses a strong interest, and is well worth seeing.

ACADEMY OF MUSIC.—On Wednesday evening, Miss Amy Stone made her debut in the "Pearl of Savoy." She was supported by H. F. Stone, Kate Denin, Mrs. Judah, Paucefort, Wilson, and others.

## A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press; or address DEWEY & VAUGHN, Mountain Messenger office, Downville, Sierra County, Cal. 7v141f

## SAN FRANCISCO

## UNION BUSINESS COLLEGE

Merchants' Insurance Building,

408 California Street.

THIS INSTITUTION IS DESIGNED TO PREPARE boys and men for business pursuits, and to impart a thorough commercial education. It is conducted upon actual business principles. The student, upon entering College, is furnished with a capital in cash and merchandise, rents a place of business, opens an account with the bank, insures his goods in the insurance office of the College, and enters upon the arena of business. He commences speculation, carrying out all the details of trade, buying and selling goods, depositing in and checking from the bank, making and negotiating notes, drafts, bills of exchange, and recording the transactions and keeping the books in a regular and scientific manner. From this he advances in other capacities, until he finally takes his position in the Union College Bank, a regularly established institution, complete in all its appointments, and having a circulation of one million in College currency. This course saves from four to six weeks' time in copying useless manuscripts. There is no vacation, and students can enter upon any business during the year. The public are invited to call and examine the various departments. Sessions day and evening. Address 7v11 JAMES VINSONHALER, Principal.

## A. S. Hallidie &amp; Co.,

MANUFACTURERS OF

## FLAT &amp; ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach.

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to any of whom we refer those interested as to the great advantages over any other kind of rope; selecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure to have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, saving in freight for remote localities. Suitable sheaves and blocks turn and when required.

Galvanized or Ungalvanized Round Wire Rope—for Ships' Rigging, Derrick guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—for wide streams. Ferry Sloops supplied.

Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{1}{4}$ -inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. 100 ft. conf.	Cir. 100 ft. conf.	Cir. 100 ft. conf.	Link 100 ft. Link.	Bk'g Wt. per Sq. in. Load.
2 26	1 33	5 100	$\frac{1}{2}$ 266	tons. lbs.
2 33	1 41	6 130	$\frac{1}{2}$ 341	11 3,700
3 41	2 11	8 216	$\frac{1}{2}$ 533	19 6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6m9p

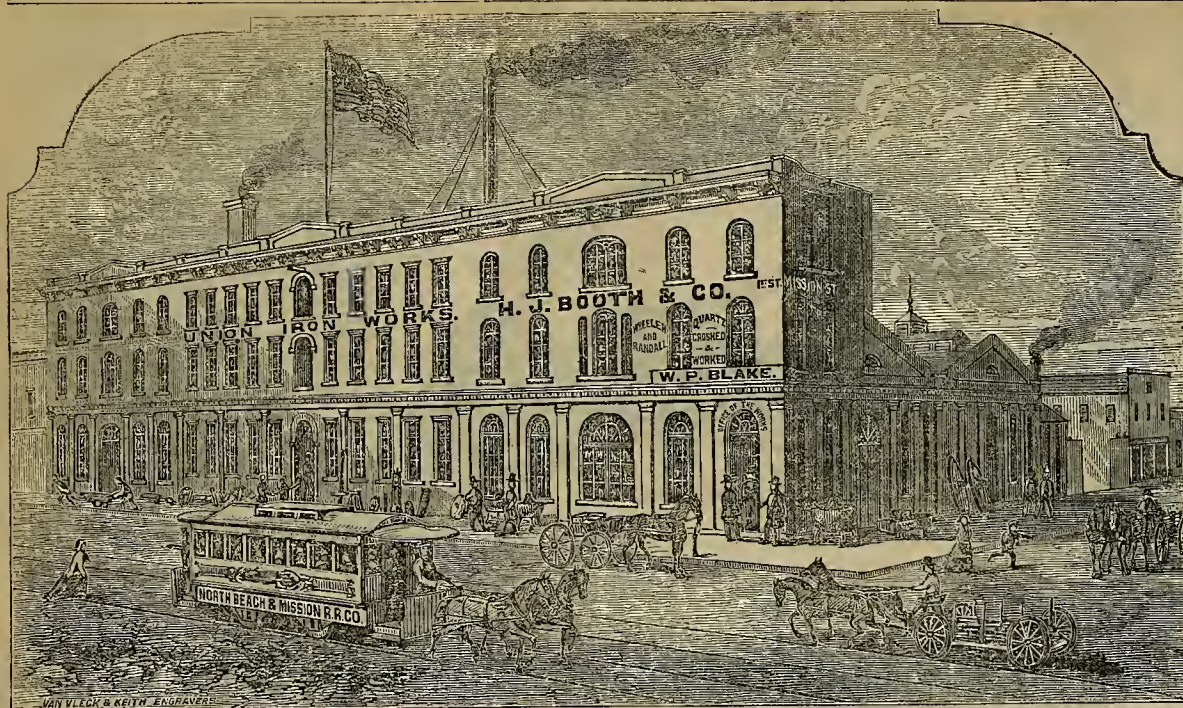
## J. S. PHILLIPS, O. E. M.,

Mining Engineer of Cornwall,

WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or Superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.

Reference—B. W. Mueser, 528 Clay street, San Francisco, Humboldt City, Nevada. 6v141f





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Bag, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's improved Tractor Curved Pan, Zenos Wheeler's improved flat bottom pan, Beldin's pan, Ventch's tubs, Prater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills. Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of Iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

24-12

IRVING M. SCOTT  
H. J. BOOTH & CO.

## Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
**STEAM ENGINES AND QUARTZ MILLS**  
DUNBAR'S IMPROVED  
**Self-Adjusting Piston Packing.**

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any Wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Geoline White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10ay-tr

**WILLAMETTE IRON WORKS,**  
**PORTLAND, OREGON.**

**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-Front and E streets,  
18v13 ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
**Sacramento.**

**WILLIAMS, ROOT & NELSON,**  
MANUFACTURERS OF

**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

**Dunbar's Patent Self-Adjusting Steam Piston Packing,** for new and old cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**  
No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining. Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 13v13-y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,  
—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.  
Special attention paid to Repairing. — 24-12

T. G. DURNING.

J. F. FISHER.

## PACIFIC FILE FACTORY

No. 53 Beale Street,  
Between Market and Mission streets, San Francisco.

**FILES RECUT AND WARRANTED AS GOOD AS NEW,** or no charge. The only establishment in the State. We also manufacture Reamer and Mower Sections. 8v13-ly **DURNING & FISHER, Prop'rs.**

## SAN FRANCISCO

**Foundry and Machine Works;**  
N. E. Cor. Fremont and Mission streets,  
Manufacturers of

**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

**Wine, Cider, Cotton and Tobacco Presses** of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston Packing,** requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS** Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates. 6v11-ly **DEVON, DIXMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**  
**STOCKTON, CAL.**

**KEEP, BLAKE & CO.,**  
MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers,**

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, Horse Fronts, Iron Penning, Balcony Railings, etc., at San Francisco prices. Orders solicited 13v13-ly and promptly executed.

LEWIS COFFEY.

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**LEWIS COFFEY & RISPON,**  
**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

J. O. HANSCOM } **HANSCOM & CO.,** { T. PENDERGAST,  
H. S. SMITH. } W. W. HANSCOM.

## Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

**Practical Machinists and Iron Founders,**  
MANUFACTURE  
**STEAM ENGINES,**  
**QUARTZ MILL MACHINERY OF ALL KINDS,**  
**SAW MILLS, FLOUR MILLS.**

**Dunbar's Improved Self-Adjusting**  
**PISTON PACKING,**

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grider and Amalgamator,**

Which only needs examination to be appreciated.  
**Tyler's Improved Water Wheel,**  
Giving greater power at lower cost than any wheel in use. Sent for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast White Iron Stamp Shoes and Dies."** None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited. 19v12

**FULTON**  
**Foundry and Iron Works.**

**HINCKLEY & CO.,**  
MANUFACTURERS OF

## STEAM ENGINES,

**Quartz, Flour and Saw Mills,**

Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-4y

**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

MARINE.

Locomotive,

And all kinds of

HIGH PRESSURE

MADE.

All Boilers guaranteed and

tested by U. S. Boiler In-

spector before sent out of

the Shop, at Shop expense.

All kinds of Sheet Iron and

Water Pipe, Coal Oil

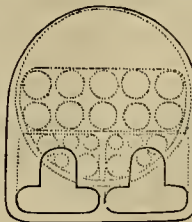
Stills, Wrought Iron

Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired

D. CAMERON.



6v12-ly

**NOVELTIES IN STEAMBOATING.**—A New York engineer has planned and is about building a river steamer, to be constructed entirely of Bessemer steel, the length to be 450 feet, the breadth 45 feet, and the displacement 1,760 tons. By constructing the steamer upon a peculiar model which he has planned, the engineer claims that with engines of 1,000 horse power he can secure a speed of at least thirty miles an hour. The boat will accommodate one thousand passengers, and is to run, if successfully built, between New York and Albany, making the trip in five hours.

Another New York engineer has prepared the plan and drawings for a boat to be propelled by the steam jet, on a modified plan of the English invention. It is proposed to construct a first-class boat, of large dimensions, for the Hudson river. The projector expects to attain a speed of from 25 to 30 miles an hour. Improvements and novelties in steamboat building seem to increase rather than diminish.

**EFFECT OF SEWING MACHINE LABOR UPON HEALTH.**—The London *Lancet* says that many women employed in the heavy manufacturing works with sewing machines, requiring the alternate motion of two treadles worked with considerable effort, had been obliged, owing to the serious effect produced upon their health, to abandon the trade entirely. The writer of the article does not consider that the same objection applies to the smaller machines in family use.

**TOWNE & BACON,**  
**Book and Job Printers,**  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices  
In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Mission,  
SAN FRANCISCO.

ALL KINDS OF BRASS, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Shunting Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and Gears of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL.

[19v13-ly]

J. H. WEED.



**JAMES MACKEN,**  
**COPPER SMITH,**  
No. 226 Fremont st., bet. Howard & Folsom  
All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
Repairing promptly and neatly attended to. 13v11

**JOHN LOCHHEAD'S**  
**Steam Engine Works,**  
Beale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT** to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
**PORTABLE ENGINES, OF ALL SIZES,**  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m

## Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.



**BLACK ROCK ORES.**—The *Susanville Sage* has the following:

A large portion of the rock is open, cellular and porous, and in most cases these cells or porosities are filled with metallic salts, entirely differing from the material composing the rock, indicating that these cells have been filled by sublimation or infiltration, by some metallic substance posterior to their cellular formation. We think that all admit that these are chlorides. But to contend that a chloride is a complication and hard to work, is to contend against reason and truth. If chloridizing ores complicates them, why do they, at Freiberg, follow the process, after so many years of practical experience; on this process depends their great success. Nature has done this for us; let us apply the labor of time to advantage as directed by judgment and common sense, and all will be right.

Two tests of these ores made this week by Ward & Bowman, have been extremely satisfactory. Some half dozen tests by amalgamation from the Snow Storm, Summit Series and Ruby have given results from one to twelve hundred dollars per ton in silver and gold. Mr. Ward has his pocket full of buttons, the result of these tests.

**MINING SUPERINTENDENTS.**—The New York *Journal of Mining* recently received a call from a gentleman, who stated that he was going out to take charge of a mine in the State of Nevada. The editor very naturally asked, "What mine have you ever worked or superintended?" He answered: "None—I'm quite new in the business." "That he will do his best," adds the editor, "is very likely, but we do not believe in setting men to do work concerning which they absolutely know nothing, and therefore advise the gentleman, for the sake of his one-tenth interest, not to go."

**HORSE RAILROADS.**—The city of New York supports eleven horse railroads, with what is equivalent to 170 miles of single track. The gross earnings of ten of these companies, for the year ending September last, was \$4,000,000, the net profit on which was \$800,000. The capital invested is \$16,000,000.

The chief mechanic in the Imperial Turkish midst, is an American, who has been employed there for thirty years past.

**To Owners of Copper Mines and Smelting Works.**

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for Smelting Copper. Address "W," care of Mining and Scientific Press. 5v14f

**Remarkable Cure of J. Calwell,**  
Who had all the symptoms of being in the last stage of consumption, by the use of ALLEN'S LUNG BALM.

DEAR Sir, Hamilton County, Ohio, April 6, 1865.—Messrs. HARRIS & Co., Gentlemen—As I have reason to believe that Allen's Lung Balm has been the means of restoring my health, I feel that the afflicted ought to know what it is doing. I was first attacked with a violent cough, attended with cold night sweats. My feet and limbs swelled. The above symptoms continued for months, until I became confined to my bed, and reduced almost to a skeleton. My physicians and friends considered my case as entirely hopeless; but I could not live. I felt compelled to commence to use Allen's Lung Balm, which was strongly recommended to me for the cure of consumption. To the astonishment of all, I began to recover almost immediately, and in less than three months' time I gained sixty pounds. I owe all to the use of Allen's Lung Balm. I now enjoy good health. Respectfully yours, JAMES CALWELL.

Sold by all Medicine dealers every where. 4v14-1m

**B. F. HOWLAND, PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Pearls, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cartes de Visites only \$25 per dozen. Visites to any made in this city or State. Give us a call and see our appliances. 5v14-6m

**Attention! Attention! Attention!**

**Look to Your Health in Time!**

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE** and speedy extermination of Pain, having no equal in the world, is now being universally used by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism? Use Healy's Rheumatic Liniment! Have you the Headache? Use Healy's Rheumatic Liniment! Have you a Sore Throat? Use Healy's Rheumatic Liniment! Have you the Toothache? Use Healy's Rheumatic Liniment! Are you subject to Cramps? Use Healy's Rheumatic Liniment! And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless H. K. L. is stamped on the cork and the face of the bottle. HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drug gists and Grocers. Price, \$1. 2v14-1m



## THE PACIFIC IRON WORKS.

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greeno Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

GODDARD & COMPANY.

## ROWLAND, WALKER & CO.,

GROCERS,

Nos. 516 and 518 Washington street,

Are offering a complete assortment of GROCERIES at the LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits. 2v13-1y

## NEW YORK PRICES.

C. E. COLLINS,

No. 63 Montgomery street, San Francisco.

EXCLUSIVE AGENT

FOR THE

AMERICAN

WATCH FACTORY.

A large assortment of these

Superior Watches.

In Gold and Silver Cases,

Constantly on hand, and sold at Factory

prices. Also,

ENGLISH AND SWISS WATCHES,

Imported directly from the Manufacturers.

The American Company are now making

VERY FINE WATCHES FOR LADIES.

A large assortment of Gold Chains

and Jewelry. 2v13-6m

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

PRICES REDUCED!



Arm—having a range and accuracy equal to a rifle, and a most perfect Carriage. All the new models for sale very low. 12v13f

ALBERT E. CRANE.

**Economy in Advertising.**—The Mining and Scientific Press is the best and most economical mining advertising medium in this city. Our terms are less than one-half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

## NATIONAL

Insurance Company!

OF SAN FRANCISCO.

Office, No. 493 Montgomery street, (Near California).

**MARINE INSURANCE.**—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.

**FIRE INSURANCE.**—Upon Buildings, Merchandise, Furniture, Rents, Vessels in Port and their Cargoes, and other Insurable Property.

Capital (Paid up) - - - \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

WILLIAM PIERCE, President. D. W. C. THOMPSON, Vice-President.  
W. W. WIGGINS, Secretary. A. NOYES, Marine Officer.

EXECUTIVE COMMITTEE:

Albert Dibble, Chairman. Joseph A. Donahue, John G. Bray, 2v13-4m  
R. G. Sneath, Abram Block.

Pacific Law and Collection Office

—OF—

W. H. ALLEN,

Attorney and Counsellor at Law,

Principal Office at Rooms 11, 12 and 13 Amory Hall Building.

502 Montgomery Street, San Francisco, Cal.

Agencies at every City and Town on the Pacific Coast. Collections guaranteed with or without suit in all the cities and counties of the Pacific and Atlantic Coasts.

Legal advice will be given free of charge until after 1st January, 1867. Postage on letters asking advice must be paid both ways. 8v13-3m

## RADICAL CURE

—OF—

RUPTURE!

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 624 Washington street, up stairs, Washington Bldg., between Montgomery and Kearny streets.

DR. A. FOLLEAU

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.

He has no connection with any Agency. 8v13-1y1p

**Quartz Mill Construction and Superintendence.**

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN engagement as a working Superintendent in the construction or operation of a Quartz Mill. Has had five years steady and successful experience in working ore in Washoe, and is practiced in saving sulphurets and the treatment of rebellious ores. Is prepared to furnish references for all the necessary qualifications of an intelligent, faithful and reliable quartz operator. Address F. M. SHAW, San Francisco, care Mining and Scientific Press. 11v13-1m

## CONNECTICUT

Mutual Life Insurance Co.

The Largest Life Insurance Company in the World.

ASSETS.....\$12,000,000.

## THE CONNECTICUT MUTUAL

IS NOW THE LARGEST AND MOST PROMINENT LIFE Insurance Company in the world, and it has

The Largest Number of Members,  
The Largest Amount Insured,  
The Largest Surplus,  
The Largest Income,

And as it obtains the LARGEST average rate of interest on its investments, and has had, through its whole history, the SMALLEST average expenses, it therefore affords insurance at LESS COST than any other Company.

The surplus premium (dividend) returned to Policy Holders during the current year is SIXTY PER CENT. of the premiums paid during the year ending 31st of January, 1863.

Insurance can be effected in this Company in all the forms desired, and to meet all the contingencies to which Life Insurance is applicable, among which forms are—

**Whole Life Policies,** by a continued annual life premium.

**Whole Life Policies,** by TEN annual premiums.

**Endowment Policies,** by a continued annual premium.

**Endowment Policies,** by a limited annual premium, for FIVE, TEN, FIFTEEN or TWENTY years.

**Endowment Policies,** made payable at any age stipulated.

ALL POLICIES issued by this Company are either non-forfeitable by their terms, or may be converted into those which are so, at the option of the insured.

This Company offers all the advantages of a CASH or NOTE Company. The assured are not required to give a note in part payment of the premium, but may, if preferred, pay the first four premiums in cash after which their dividends on Annual Premium Life, and Continued Premium Endowment Policies, will, if the past success of the Company is continued, reduce their premiums ONE HALF. When notes are given for Annual Life and Continued Endowment Premiums, no notes will be required after the fourth payment, and the returned surplus—dividends—will be applied as cash to the reduction of the annual premium.

None but Unexceptional Risks Accepted; and only upon ages between Fourteen and Sixty.

## DIRECTORS:

JAMES GOODWIN, HENRY C. ROBINSON,  
GEORGE S. GILMAN, GUY R. PHELPS,  
MARCUS F. HOLMES, E. D. HILFANY,  
New York, CHARLES F. THAYER, Boston,  
N. M. WATERMAN, JOHN C. PALMER,  
F. B. WATKINSON, THOMAS SISSON.

GUY R. PHELPS, President.

Z. PRESTON, Vice-President.

W. S. OLMSTEAD, Secretary.

O. W. POWERS, Actuary.

A. D. SMITH & CO.,

General Agents Pacific Coast,

Office, N. W. corner Montgomery and Sacramento streets, San Francisco. 17v13 p12

## Accidental Insurance!

The Accidental Insurance Company OF NEW YORK,

ISSUES POLICIES INSURING AGAINST INJURIES OF all kinds, and death resulting from accident. In case death does not result from the injury, the insured receives a weekly compensation as long as he is disabled (not to exceed twenty-six weeks).

## ONE YEAR POLICIES.

\$5 will buy Policy for \$1,000, with weekly compensation of \$5.

\$10 will buy Policy for \$2,000, with weekly compensation of \$10.

\$50 will buy Policy for \$10,000, with weekly compensation of \$50.

## SHORT TERM POLICIES.

Policies will also be issued for any other amounts within the limits before stated, for periods of one to six months, at rates in tenths of the Annual rate, as follows:

1 month,	2-10.	4 months,	5-10.
2 "	3-10.	5 "	6-10.
3 "	4-10.	6 "	7-10.

## GENERAL ACCIDENT TICKETS.

This Company also issues Tickets which are sold by many of its Agents at Hotels and Ticket Offices through the country.

They make Insurance for \$8,000, and \$25 per week compensation, against Accidents of every description, Traveling or otherwise; good for one to six days, as required, at TWENTY-FIVE CENTS PER DAY.

They are not simply Travelers' Insurance Tickets which cover only injury or death, the result of an "Accident to the Public conveyance" in which the assured may at the time be traveling, but they are GENERAL ACCIDENT TICKETS.

## SEA VOYAGE POLICIES

Are issued, covering the risks of travel to European and other Ports. Rates varying with the season, and the voyage to be taken. Information can be had of the Company or its Agents.

The Company has a PAID UP CASH CAPITAL OF \$250,000. One hundred thousand dollars deposited with W. BARNES, Esq., Superintendent of the Insurance Department of the State of New York, and the remainder securely invested in Stocks in the hands of the Company.

## INDUCEMENTS.

The rates of Premium are very low. The Plan is so simple that any one can comprehend it in its workings.

No MEDICAL EXAMINATION is required, and those who have been rejected by Life Companies, in consequence of hereditary or other diseases, can effect Insurance in this Company at a very small cost.

No better or more satisfactory use can be made of so small a sum.

For Policies or further information, apply to

A. D. SMITH & CO.,

General Agents for the Pacific Coast.

Office, N. W. corner Montgomery and Sacramento streets San Francisco. 17v13







**Camargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1887, an assessment of twenty dollars per share was levied upon the capital stock of said Company, payable immediately. In United States currency, to the Secretary, 402 Front Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.  
Office, 402 Front Street, San Francisco. feb16

**Jalla Gold and Silver Mining Company, Storey County, State of Nevada.**

Notice—There are delinquent, upon the following described stock on account of assessment levied on the tenth day of January, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Cason, P.	180	50	\$50.00
Holado, J.	181, 182, 25-a	50	50.00
Lanzweert, L.	37	20	20.00
Mackinn, R.	185, 186, 25-a	60	60.00
Mibelle, J.	39	10	10.00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of January, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Maurice Gore & Co., No. 327 Montgomery Street, San Francisco, California, on the sixth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. NOEL, Secretary.  
Office, 607 Washington Street, San Francisco, Cal. feb16

**Mount Tenabo Silver Mining Company, Location of Works: Cortez District, Lander County, State of Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of February, 1887, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 331 Montgomery Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eleventh day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery Street, San Francisco. feb16

**North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.**

Notice—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Hugh Whitell	255	12	\$150.00
Hugh Whitell	256	50	625.00
Richard O'Neill	257	25	312.50
Nathl Page	258	125	1562.50
Nathl Page	259	4	50.00
Nathl Page	260	125	1562.50
Nathl Page	261	5	62.50
Nathl Page	262	6	75.00
Nathl Page	263	5	62.50
Nathl Page	264	5	62.50
Nathl Page	265	100	1250.00
Nathl Page	266	5	62.50
Nathl Page	267	5	62.50
Nathl Page	268	5	62.50
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Nathl Page	270	100	1250.00
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And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of January, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesrooms of Maurice Gore & Co., No. 327 Montgomery Street, San Francisco, Cal., on Friday, the fifteenth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. W. KINNEY, Secretary.  
Office, No. 418 California Street, Room No. 6, third floor, San Francisco. feb12

**Salamander Gold and Silver Mining Company, Location of Works: Leon's Ranch District, Calaveras County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of February, 1887, an assessment (No. 7) of fifty cents per share was levied upon the assessable capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, E. J. FEIFFER, at the Office, No. 210 Post Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the tenth day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

E. J. FEIFFER, Secretary.  
Office, No. 210 Post Street, San Francisco, Cal. feb16

**Whitatch Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1887, an assessment of fifteen (\$15) dollars per share was levied upon the capital stock of said Company, payable immediately. In United States currency, to the Secretary, 402 Front Street, San Francisco, Cal.

N. C. FASSETT, Secretary.  
Office, 402 Front Street, San Francisco. feb16

**Young Harmon Gold and Silver Mining Company, El Dorado County, State of California.**

Notice is hereby given, that at a meeting of the Board of Trustees of the Young Harmon Gold and Silver Mining Company, held on the fourteenth day of February, 1887, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately, in gold and silver coin of the United States, to the Treasurer, G. S. ARMSTRONG, No. 313 Dupont Street, City of San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. S. ARMSTRONG, Secretary.  
Office, 313 Montgomery Street, San Francisco. feb16

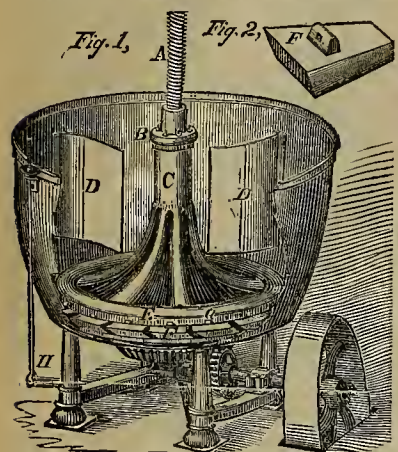
**Blac Ledge Gold and Silver Quartz Mining Company, Kelsey District, El Dorado County, California.**

Notice is hereby given, that at a meeting of the stockholders of the above named Company, will be held on the twenty-third day of February, 1887, at 10 o'clock P. M. of that day, for the purpose of altering the By-Laws of the Company, and transacting such other business as may come before said meeting.



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First Street, where his Pan is manufactured, and is to be seen at any time in operation.

## V. CUSHING, Agent

—FOR THE—

Purchase & Shipping of Machinery  
OF ALL KINDS.

Special attention given to Quartz Mill Machinery and Findings, and Miners' Material of every description.

Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city.

Refer, by permission, to—

Governor F. F. Low, San Francisco; C. T. Naylor, Stockton; Geo. Underhill & Co., San Francisco; J. W. Stowe, Russell & Erwin, Manufacturing Company, Odessa, No. 120 Front Street, San Francisco.

4v12

## HUNTER'S IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphurets ores will do well to have their sulphurets saved, as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the UNION FOUNDRY, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY,  
San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

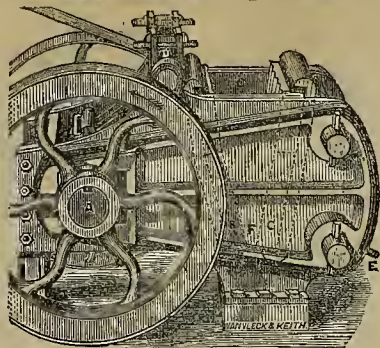
PICKERING'S GOVERNORS  
For Steam Engines.

Giffard's Injectors,  
For Feeding Boilers.

STODDART'S IRON WORKS,  
Beale Street, San Francisco.  
23v12 3m

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low terms:

No. 1.—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2.—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....\$850  
No. 3.—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the link or radius bar, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First Street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

RAWHIDE RANCH, Tuolumne Co., Sept. 25, 1866.  
JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,  
R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED CERNAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that, and after the last November, 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.  
A drawing and full description of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

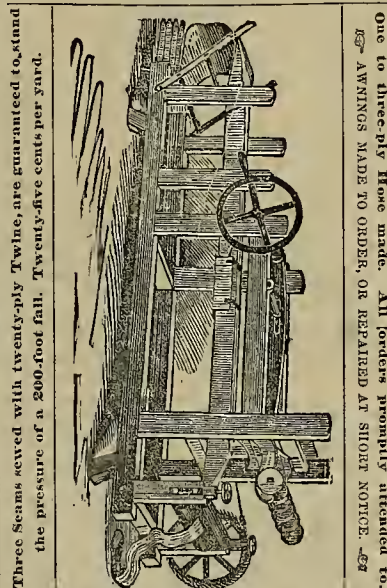
A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866.

BRODIE &amp; RADCLIFFE,

Express Building, 402 Montgomery Street, San Francisco.

## PATENT HYDRAULIC HOSE SEWING

By S. HOWARD,



No. 326 DAVIS STREET, San Francisco.

22v13-3m

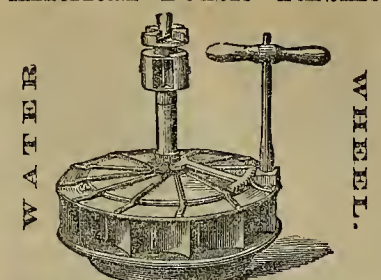
## STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine the Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation daily, at the San Francisco Foundry, Fremont Street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 G. W. STRONG, Assayer.

## LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALED AND UNRIVALED IN the United States or the world, have been fully tested on this coast more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—L. Stockett, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington Santa Clara County. Send for Circular to

KNAPP & GIANT,  
Agents for California.  
26v13-1yq 310 Washington Street, San Francisco

## Hunt's California Pump

Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years.

Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Irrigating, Saw Frames, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.

For further particulars, send for Circular.

E. O. HUNT,  
21v13tf 28 Second and 110 Jessie Streets, San Francisco.

PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3.—3-inch cylinder, 6-inch stroke.....\$30 00  
No. 4.—4-inch cylinder, 6-inch stroke.....35 00  
No. 5.—5-inch cylinder, 6-inch stroke.....40 00  
No. 6.—6-inch cylinder, 8-inch stroke.....50 00  
No. 7.—8-inch cylinder, 12-inch stroke.....90 00  
A liberal discount made to the Trade.  
For further particulars, send for Circular.  
E. O. HUNT,  
21v13tf 28 Second and 110 Jessie Streets, San Francisco.

## BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1866.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market Street, San Francisco.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont Street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc., etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

19v13-3m JAMES HITCHENS.

## Notice to Miners, Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,  
8v13-1y Stove Store, No. 125 Clay Street, below Davis.

SUBSCRIBERS who do not receive the Mining and Scientific Press in due time, are requested to inform the publishers

A TOWN WITH A PROMISING FUTURE. Belmont is now the county seat of Nye county, Nevada. It is eighty miles south of Austin. The Reveille thus speaks of its surroundings:

The ravine on which Belmont is situated is the proper head of Ralston's valley. The mining district bears the name of Philadelphia, although more generally known as Silver Bend. The ledges which have given it celebrity are the Highbridge, Transylvania, El Dorado, Wide West, Silver Cord, Silver Champion, and their extensions, with perhaps some others not so well known. A mill is in operation, which, although very incomplete and wasteful in its working, produces about \$20,000 per month. From the size of the ledges, their evident richness, and the facilities for mining and reduction, there appears no limit to the amount that may be produced. Ascending the high mountain in the west, the eye can take in a silver-bearing country, that we may venture to say has not its equal upon earth in the multiplicity of its ledges or their individual wealth. In the range are the districts of Silver Bend, Great Basin, Manhattan, Santa Clara and Northumberland; to the west is the Tolyabe and the district of Twin river, where one mill is pouring out its treasure of forty or fifty thousand monthly, while over the summit are the districts of Washington and Marysville in the same county; to the south is seen the lone and singular mountain of San Antonio; to the east are the districts of Danville, Hot Creek, Empire, Morey, Reveille and Palhranagat, all of which, east, west, north and south, claim to be incomparable.

NEW YORK STOCK BOARDS.—There are four distinct Stock Boards in this city—the Stock Exchange, the Open Board, the Gold Board and Mining Board. The business of the last is rapidly increasing, the sales amounting to many thousands of shares per day. Most of the mines are located in Colorado, where New York invested many millions of dollars in 1863-4. Those which are most actively dealt in are the survivors of the hundreds then so promising. A mining company here has rarely less than 40,000 shares, and yet woe to the bear who sells too many short. The holders organize a corner in a twinkling, and pounce upon the wretch for all he's worth. The prices of the shares, however, rarely range above five or ten dollars. There is a lively feeling in mining stocks at present, the sales yesterday exceeding 20,000 shares. Before they were aware of it the bears had sold 30,000 shares of one company "short," and "they are catching it." You do nothing of that sort in California, of course.—Cor. Bulletin.

A GOOD SUGGESTION.—We clip the following from one of a series of articles on mining, which is being published by the Owyhee Avalanche:

It is always possible to so regulate the draught in a mine that a uniform temperature shall exist. Not so, however, in regard to water. But where a mine is very wet, so that the workmen are obliged to work with their clothing saturated with water, it is the duty of the employer to provide what is called a changing house—a room at the mouth of the mine—which should be kept warm, where the workman may change his wet clothes for dry ones before exposing himself to a change of temperature. By thus taking care of the health, and at all times condescending to the comfort of the workmen, he will enable them to perform a regular task, which will enable him to calculate with some degree of certainty the amount of work he can accomplish in a given time.

MONTE DIABLO COAL.—The Stockton Independent says:

The product of these coal mines is constantly increasing in public favor, and is much more sought after now than it was a year or two ago, for steam engines and for household uses. It contains too great a quantity of sulphur to be extensively used in the working of iron in forges; but as the workmen descend in the mine, the probabilities are that the article will become more solid, compact and free from volatile gases. The coal found at Corral Hollow is undoubtedly on the same range with that of Monte Diablo, but is lighter in quality, or not so much mineralized.

MINING IN INDIA.—An English company with large capital are opening coal and iron mines in the Nerbudda Valley, India. The Great India Peninsula Railroad company is building a branch road to the mines, and have a contract by which they will get the coal necessary for their engines at about one-third the cost of the imported article.



**FOSSILS IN DACOTAH.**—Dr. Hayden and two other gentlemen of the Philadelphia Academy of Natural Sciences, have collected a number of very interesting fossils in Dacotah, for the Smithsonian Institution. The remains of fresh water turtles point to the fact that the spot was once a lake shore; while later remains of an extinct species of camel attest that after the lake had ceased to exist, a burning sand plain took its place. Next come abundant specimens of an extinct species of ruminating animals, showing that these sand plains were afterwards covered with grass. Next, carnivorous animals who probably fed upon the aforesaid ruminants. No trace of man is found.

**"COURSE OF MINERAL VEINS."**—An article under the above heading has lately been published in several of our exchanges, and credited to the New York Mining Index. It appeared in the Grass Valley Union of yesterday. The article first appeared in the Reese River Reveille, some months ago, was written by Myron Angel, the editor of that paper, and was stolen, word for word, by the Mining Index, and published as an editorial. —Nevada Gazette, Feb. 6th.

Some other Eastern journals are "on it" as well as the Index. We would help pass 'em round, only we feel a little delicate about it. —[Eds. Press.]

A NEW MINERAL has been discovered by Wohler in the fine-grained platinum ore from Borneo, to which he has given the name *aurite*. It is a sulphide of ruthenium and osmium, consisting of small grains of iron-black color of high luster, harder than quartz. Its analysis gave ruthenium 65.18, osmium 3.03, sulphur 31.79. This is the first sulphide found in the group of platina metals.

**A STRONG-MINDED WOMAN.**—The Mrs. Burdell-Cunningham, who made so much noise a few years ago, has got a silver mine all to herself in Lower California. It is in Loretto, about one hundred miles north of Cape St. Lucas. She is her own superintendent, amalgamator, caterer and treasurer.

An article, supposed to be petrified bacon, was found a short time since on Carson River. It is "hard enough to drive a nail with."

**MELLVILLE C. KEITH, M. D.**  
Homœopathic Physician,  
No. 25 Montgomery st., opposite the Lick House, (Room 12,  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
18v13 6mr

**Job Printing Press for Sale--\$250.**

A Largest Size (half medium) RUGGLES' BEST JOB  
PRESS, in fine order and good as new, can be had for  
\$250, cash—lowest price. Warranted. Apply to  
DEWEY & CO.,  
Mining and Scientific Press Office.

**WE ARE NOW OFFERING  
OUR IMMENSE STOCK**

**Fine Custom Made Clothing**

**Gents' Furnishing Goods**  
**AT PRICES THAT DEFY COMPETITION.**  
Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**  
BOTH OF MATERIAL AND FINISH.

A Large Assortment of  
**Trunks, Valises, Carpet Bags, Blankets, Etc.,**  
AT EXTREMELY LOW PRICES.  
**J. R. MEAD & CO.,**  
8v10 Cor. of Washington and Sansome streets.

**Brown's Filtering Heater!**

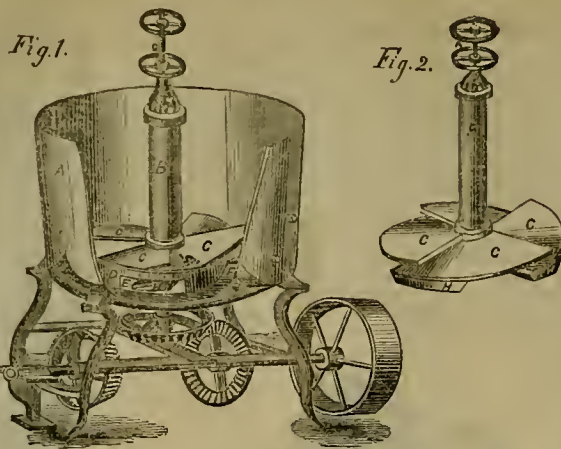
FOR PREVENTING INCORUSTATION IN STEAM BOILERS,  
purifies water from lime or any other impurity,  
saves fuel, saves the boiler, prevents explosions, and pro-  
tects life and property. The cost of the Filter is soon saved  
in fuel and boiler-repairs alone.  
One is in operation at the San Francisco Foundry, Fremont  
street, where Rights can be procured, or all needed  
information, on application, in person or by letter, to  
AUSTIN A. WELLS, Agent.  
8v14 4y

**BLAKE'S QUARTZ BREAKER!**  
**PRICES REDUCED!**

MACHINES OF ALL SIZES FOR SALE  
—BY—  
**WM. P. BLAKE,**  
Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## Gaston's Screw Grinder and Amalgamator

—IS—  
The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect *sculler*. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw miller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the miller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the miller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above, presses all under the miller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

**HAYWARD, COLEMAN & CO.,**  
IMPORTERS AND REFINERS  
—OF—  
**Illuminating, Lubricating,  
—AND—  
PAINT OILS!**  
CONSISTING OF  
KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
TANNERS', NEATSFOOT, BOILED AND RAW  
LINSSEED, CASTOR AND CHINA NUT.  
—ALSO,—  
**SPIRITS OF TURPENTINE & ALCOHOL**

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**  
An elegant and complete assortment on hand.  
v13 3m19 414 Front street, San Francisco.

**PACIFIC POWDER MILL  
COMPANY'S  
BLASTING POWDER!**  
MANUFACTURED  
IN MARIN COUNTY,  
CALIFORNIA.

FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
AGENTS,  
414 Front Street, San Francisco.  
3v14 1m

**IMPORTANT  
—TO—  
WORKERS OF GOLD & SILVER ORES.**

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on MR. WILLIAM SLOSSON, at Prof. W. P. Blake's Office, and obtain a Rusher-Greiner, just published by the WURTZ AMALGAMATION COMPANY of New York, who have secured, under the Patents of Prof. Henry Wurtz, the sole and exclusive right to the use of Sodium in amalgamation. Mr. Slosson is prepared to supply the licenses of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Barnard, of Columbia College, "two grains of gold may be gathered where but one was before." 19v13 2u

**TIME & LABOR SAVED  
BY USING**

**STANDARD SOAP COMPANY'S  
WASHING POWDER,**

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1 lb each, and in wooden boxes of 25 lbs bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 19v12q

**JOHN TAYLOR & CO.**  
IMPORTERS,  
AND DEALERS IN  
**ASSAYERS' MATERIALS,  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.,**  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior  
**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 1v10 4f

**WOODWARD'S GARDENS!**  
**MUSEUM,**  
Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.  
**Open Every Day!**  
ADMISSION:  
To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
These Gardens are accessible by the Howard, Folsom and Market street Cars.  
Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 2v13qr

**Baldness! Baldness!!**  
CAN BE PREVENTED, BY USING

**Mayhew's Balsamic Hair Stimulant!**

THIS PREPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

**W. E. MAYHEW, Druggist,**  
N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.  
Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13 6w

**Just Published.**

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF THE NERVOUS SYSTEM AND REPRODUCTIVE ORGANS, to be had by addressing and inclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 19v13 1y

**HALL'S SARSAPARILLA,**  
**YELLOW DOCK AND IODIDE OF POTASS.**

**THE BEST BLOOD PURIFIER KNOWN.**

Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Boils, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Apele nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."  
**SHEPARDSON & GATES, Prop's.**  
N. W. cor. Sansome and Commercial sts.  
2v13 3m

**TRUSSES! TRUSSES!!**  
**Abdominal Supporters!**  
**Shoulder Braces, Etc., Etc.**

WE WOULD CALL THE ATTENTION OF DEALERS and others to our complete assortment of these goods, including Bartlett & Bateman's Celebrated BALL AND SOCKET REVERSIBLE TRUSS, which is decidedly the best article ever introduced into this market. By a combination of the movement of the ball and socket, and the movable arm, any desired angle may be obtained. Call and examine for yourselves. A liberal discount to the trade.  
**SHEPARDSON & GATES, Agents.**  
2v13 3m Corner Sansome and Commercial streets.

**Rheumatism!!**  
**Still Another Witness!**

LATHROP, Cal., Sept. 19, 1865.  
(White Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than at times a slight and temporary relief.  
About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably puts it to flight. I therefore cordially recommend it to be afflicted as an untailing remedy for Rheumatism.  
**FREDR. FABER.**

**Richard's Remedy** is for sale by  
**H. BOWMAN, Druggist, Sacramento.**  
2v13 And by Druggists generally.

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**

**E. D. WATERS, Proprietor.**  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only

**Commercial Paper  
ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.

**Terms, \$9 per Year, payable in advance.**

**THE LETTER SHEET PRICES CURRENT**

For enclosure in letters, is also published every  
STEAMER DAY.  
13v13 4f

**REPORT  
—OF THE—  
COMMITTEE  
—ON—**

**SEWING MACHINES!**

**California State Fair, 1866:**

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY:  
Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

**FOR GENERAL FAMILY USE  
—THE—**

**"FLORENCE"**

**—IS—  
"THE BEST."**

(Signed) **J. N. ANDREWS,  
THOMAS C. McHALE,  
L. ELKUS.**

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco.  
17v13



A CURIOSITY.—Mr. W. A. Holcomb, of this city, has shown us a copy of the *Independent Chronicle and Universal Advertiser*, printed in Boston, Mass., on Thursday, April 19th, 1792. It is Vol. XXIV No. 1225. Thomas Adams, Court street, is the publisher. Although somewhat mutilated, this is a most interesting and valuable relic. The matters of daily interest to our great-grandfathers are brought more distinctly home to our conception by the perusal of a document of this kind, than they could possibly be by any other means. Here we have an advertisement for a runaway apprentice, for whom a reward of eight pence is offered, by John Bent, jun. Again: "Elkanah Hawks, Respectfully acquaints the inhabitants of this Town that he continues his school for Misses, whom he receives at Hours suitable to their Convenience." Underneath the head of "Topographical Department," is an essay entitled "Thoughts relative to Navigable Canals," in which the writer gives elaborate directions for the construction of locks, etc., probably never dreamed that canals would ever be superseded as a means of transporting freight. The laws of the Commonwealth of Massachusetts, being published in this sheet "By Authority," we find in this number several Acts signed by John Hancock, as Governor, and John Avery as Secretary. The old-fashioned type and the coarse, dingy paper, remind us of the fact that they happen to be, just now, again in fashion. To our own notion, they seem absurdly out of place, unless associated with that peculiar quaintness of phraseology which was common at the time they were in use. However, we will only say, "*De gustibus non disputandum est.*" If people who have succeeded in making a beautiful white paper after years of tribulation, will tint it so as to make it look smoky, why let 'em, that's all!

PROFITS OF PATENTS.—A sewing machine, which costs the manufacturer but twenty dollars, sells for one hundred dollars; mowing machines, which cost thirty dollars, sell for one hundred and forty dollars. A small machine for sawing wood, recently invented, and which costs but eight dollars to construct, is being sold for thirty dollars. India-rubber goods, and many fancy articles, sell for a much greater advance on the price of manufacture.

THORNBURG vs. THE SAVAGE CO.—A Carson City telegram, dated February 12th, says that Judge Baldwin, in the U. S. District Court, had that day granted an injunction in this case, and also stated, that if, upon examination of the law, he found it conferred sufficient authority, he should fine the Company twenty thousand dollars for contempt in disobeying the former order of the Court.

ARIZONA NOTES.—A letter from the Deputy Postmaster at El Dorado Cañon, Jan. 24th, gives these items:

Placer gold has been found in the neighborhood. This is the first that has been discovered in this place and Calville. The steamer Esmeralda recently landed seventy-five tons of freight for Pahranaagat. Two quartz mills formed a part of this.

A great many hungry Montana miners are passing daily.

COAL FROM WASHINGTON TERRITORY.—A sample of coal from the Phoenix mine, near Cape Flattery, was brought to this city by Mr. Francis, recently from Victoria. It is said to be superior to any heretofore discovered on the coast.

R. H. DUNNING'S BOX RIFLE.—We have seen a letter from R. H. Penrose, Secretary of the What Cheer Mining Co., at Relief Hill, Nevada county, in which he speaks highly of this patent rifle. He says that the last time they cleaned up, they found one piece of gold in the box worth nineteen dollars.

The *Mining and Scientific Press* is all that its publishers claim for it, being a compendium of mining news on the Pacific Coast, and a general disseminator of all matters of interest to the mechanical and agricultural portions of the State.—*Dutch Flat Enquirer*.

## TO MINERS, MILLWRIGHTS AND FARMERS.

We beg leave to call your especial attention to the  
**EXCELSIOR**  
Double-Acting Suction and Force Pump.  
Hooker's Patent, Aug. 15, 1865.

This Double-Acting Suction and Force Pump, the best in use, is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and is warranted to furnish more water, than any other Pump of equal caliber. It has Puppet Valves, faced with vulcanized rubber, which cannot be wrongly placed in the Pump. The valves can be changed without disconnecting air-chamber, suction or discharge pipes.

In case of necessity, the Pump can be run at any high rate of speed, and will furnish water proportionately. The Excelsior Pump is equally adapted to use for surface and deep wells or shafts. It can be run by windmill or horse power for irrigating purposes; also by hand or steam power on steamers and ships. For domestic use, no better Pump can be found.

Fig. 3.

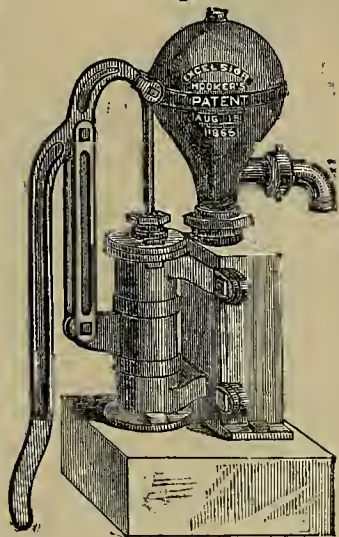
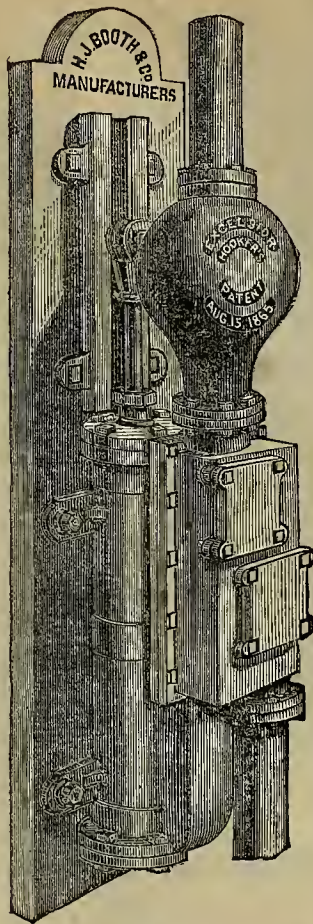


Fig. 3 represents a Hand Pump, which works very easy, and with even power. Fig. 4 is a 6-inch Mining Pump, showing adjustable bonnet of the valve chest.

For Circulars, or further particulars, inquire of or address J. W. BRITTAN & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or  
1am CUSHING & CO., Prop'rs, San Francisco.

Fig. 4.



W. T. GARRATT,  
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Babbet Metal Castings;  
CHURCH AND STEAMBOAT  
BELLS,  
TAVERN AND HAND BELLS AND GONGS,  
FIRE ENGINES, FORCE AND LIFT PUMPS,  
Steam, Liquor, Soda Oil, Water and Flange Cocks, and  
Valves of all descriptions, made and repaired. Hose and  
all other joints, Spelter, Solder, and Copper Rivets, &c.  
Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,  
HYDRAULIC PIPES AND NOZZELS  
For Mining purposes, Iron Steam Pipe furnished with Fit  
tings, &c. Coupling Joints of all sizes. Particular attention  
paid to Distillery Work. Manufacturer of "Garratt's Patent  
Improved Journal Metal."  
Highest Market price paid for OLD BELLS, COPPER  
AND BRASS.

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SACRAMENTO,  
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May be had, as the proprietor is going home to Europe. It  
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and permanent investment. The business of the establish-  
ment is exceedingly flourishing, as can be shown. The  
Shop is of brick, new and well built. The lot is 85 feet front  
by 163 feet in depth, in a good location for this business, on  
Front street, between N and O streets.  
Inquire at the office of the Foundry, or address  
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26 1/2 13th St. Sacramento, Cal.

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W. B. EWER.

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San Francisco, May 1st, 1866.

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Constitution and By-Laws

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ESTABLISHED

[MAY, 1866.]

### VOLUME FOURTEEN

—OF THE—

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COMMENCING JANUARY, 1867.

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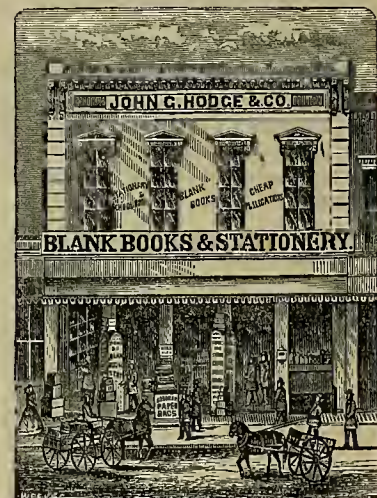
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B. M. HARTSHORNE,  
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That excellent paper has donned a new dress of California manufacture.—*Reese River Recluse*.



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SAN FRANCISCO, SATURDAY, FEBRUARY 23, 1867.

VOLUME XIV.  
Number 8

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[Reported for the Mining and Scientific Press.]

## California Academy of Natural Sciences.

### REGULAR MEETING.

SAN FRANCISCO, Feb. 18, 1867.

President in the Chair.

Messrs. I. W. Raymond, Rodman, Gibbons, Thos. H. Selby, Daniel Knight, Dr. F. H. Holman, Edmund Scott, Henry Edwards, John Melville, Geo. Daly, Robinson Gibbons, Gregory Yale, Jas. Howden, Geo. Filmore, Marshall Eastings, John L. Eckley and Lee J. Ransom, were elected resident members; Dr. J. G. Cooper was elected a life member.

Mr. Gates presented the skull of a Digger Indian taken from an old Indian burial ground.

Prof. Blake read a paper concerning some fossil elephant's teeth found on the Northwest Coast of this continent, in the neighborhood of Behrings Straits, stating that the point where these teeth were found is the farthest north at which elephant remains have been found in North America.

Dr. Gibbons made some interesting remarks on the poor quality of the macadamizing material employed on the streets of this city, and inquired if any person knew of the existence of any better material for that purpose.

Prof. Whitney replied that the State Geological Survey had paid particular attention to that matter, and had instituted a careful examination in that direction. The nearest locality at which any suitable macadamizing material can be obtained, is at a point near Petaluma, where an excellent quality of trap rock is found, in great abundance, and at a point convenient for shipment.

Mr. Falkenau read a very interesting paper on "Peat," which will be found in full, on another page. That paper elicited considerable discussion, during which Mr. Bolander remarked that he had found the moss plant, from which peat was generally produced, growing on the coast and in the Sierras, and had seen limited deposits resembling peat in various localities; but he doubted whether it was the real peat. He further stated that owing to the frequent washes in the mountains by our heavy rains, the peat formations were interspersed with layers of sand, which greatly impaired their value for fuel. Mr. Keys said he understood the peat formations round the bay were impregnated with salt to such a degree as to put out the fire when it was attempted to burn it. Dr. Behr said there were formations of peat near Moore's Landing, Alameda, which the inhabitants there used for fuel. Several members expressed doubts as to the probability of obtaining any great supply of peat in this State, and referred to the newspaper notices on the subject with surprise.

Prof. Whitney made some remarks supplementary to his communication in 1862, as to which was the highest mountain in the

United States, and which was the highest in North America. He claimed that California had the highest mountain in the United States, and that Popocatepetl was the highest in North America, but in mass of mountains California excelled the Mexican Cordilleras. Prof. Whitney exhibited an apparatus for boiling water in such a way as to show the height of mountain elevations; also a short (24 inch) barometer, which was more conveniently carried in the mountains than the long or 29-inch instrument.

Adjourned.

**MEDICATED INHALATION.**—Of late years various devices have been employed to secure a successful means of reaching the disorders of the throat, bronchial tubes and lungs, by inhalation. The latest French device has been to inhale fluids in the form of fine spray, by forcing the fluids through exceedingly fine openings—a process known as pulverization. This is, at best, a disagreeable method, and often risky; as it is evident that thereby other parts, not intended to be acted upon, may become affected. What is wanted is a more perfect system of pulverization—one by which, without effort and without interruption to the occupation of the patient, the desired medicine can be administered in a finely diluted state, in which it can act in a gradual and natural manner on the throat and lungs. Professor Fleury, of New York city, has invented and patented an apparatus which seems to meet this want most perfectly. It consists of a globular vessel, partly filled with water and suspended over a lamp, by an attachment connected with the lamp itself. This apparatus is so arranged that when the lamp is lighted, a jet or jets of steam is forced out through the medicated matter, whether of herbs or any other preparation, so that the aroma is diffused through the apartment and naturally inhaled. The steam is at the same time made the medium by which the healing substances are extracted. The condensation of steam will also absorb the carbonic acid, and other poisonous gases in the room, at least all such as are soluble in water. The same device can also be employed to drive out mosquitos or vermin, or for fumigation purposes.

**MINING BUREAU.**—The bill now before Congress, introduced by Senator Stewart of Nevada, and Representative Higby, of California, provides for the establishment of a Mining Bureau, "the general design and duties of which shall be to acquire and diffuse among the people of the United States useful information on subjects connected with mines and mining, in the most general and comprehensive sense of these words." Such a department as this in connection with the Government, is certainly a desideratum in this country, if any where. We hope that our Representatives will never desist from harping upon the matter until something is done worthy of the Congress which makes laws for the most extensive mining country in the world.

We have to acknowledge the receipt, from O. H. Grey, of the Report of the Nevada State Treasurer.

## The Sauce Mine. Lower California.

This mine is located in the Comodon district, on the Gulf side of the Peninsula, about 180 miles above La Paz and fourteen from the Bay of San Bruno. The company have quite an extensive mining property, embracing in all six distinct lodes. Title is obtained through a Mexican grant, which has been occupied as a homestead for over thirty years. The locality is said to be well supplied with wood and water. The facilities for shipping are very favorable, there being a good port at the Bay of San Bruno, only fourteen miles distant, affording a safe harbor for the largest ships. The steamer John L. Stephens frequently stops there to land passengers and freight.

The principal lode is known as the Sauce mine, which presents some most remarkable characteristics. The copper in this lode is chiefly native and disseminated throughout the entire mass of the vein rock, mostly in thin plates or laminae, ranging in thickness from that of a sheet of tissue paper, in infinitesimally small scales, up to sheets a quarter or half an inch thick. The gangue consists of a kind of friable mica schist, the chief portion of which is mica, in small scales, easily broken to pieces with a pick. We know of but one other mine in the world carrying a similar gangue, and that a very rich one in Mariposa county in this State. Interspersed through the gangue is also found, in fine granular form, a rich sulphuret of copper, highly vitreous in appearance, and which is easily separated from the gangue by stamping and concentrating; as is also the chief portion of the native copper.

A small 4-stamp prospecting mill has been erected near this mine, in which 100 tons of the ore have been crushed, to test its value. The mine has been developed to the depth of 114 feet in the deepest shaft, (No. 1); at which point the lode is seven feet wide, yielding a fair average of native copper, accompanied with the vitreous sulphide. At 56 feet in depth in this shaft a drift has been extended 100 feet on the course of the vein, in one direction, and in the same direction another drift has been run 120 feet, commencing at a point ninety-six feet from the surface. The direction of the lode is north ten degrees east, with an easterly dip of sixteen degrees from a vertical line. Shaft No. 2 has been sunk on the course of the ledge, 21 feet deep and 462 feet north of shaft No. 1. Shaft No. 3 has been sunk twenty-one feet south of No. 1 and fifty-six feet in depth. The ledge is said to average about fourteen feet in thickness. The entire claim is 2,625 feet in length.

The 100 tons of ore crushed has yielded an average of \$44 per ton in value of native metal and workable mineral. Should the average thickness of the mine continue as indicated by the above figures, with the same per ton of metal and ore, it would indicate a yield of the mine, if worked to the depth already opened, of several millions of dollars. We have heard more or less of this mine for the past three years, and taking the accounts to be correct, it promises at no future day to prove one of the most valuable mines on the Pacific coast.

## Conveyance of Mining Claims.

The *Pacific Law Magazine* for January contained a report of the decision of the Supreme Court, in *Goller, et al. vs. Felt, et al.*, in which the title to a mining claim was involved. The decision was to the effect that the Act of April 13th, 1860, made a written instrument, in the conveyance of a mining claim, mandatory, and that conveyance by parol was thereby excluded, and of no value against a subsequent written conveyance. The February number of the same journal contains a letter from W. R. Boncher, of Mokelumne Hill, in which he states, that although the Act referred to appears on the Statute Book, it never passed the Senate, and is, therefore, not a law! The *Senate Journal*, page 596, shows that the bill was indefinitely postponed.

The bill was duly certified by the President of the Senate, and the Speaker of the House, and was approved by the Governor. In a certain similar case, the Supreme Court ruled that it could not go behind the record which showed these points, and that, therefore, the law must be treated as having been actually passed by the Legislature. The Act of April 13th, 1860, must, then, be considered the law in regard to such conveyances.

We copy it for the benefit of our readers:

Conveyances of mining claims may be evidenced by bills of sale or instruments in writing not under seal, signed by the person from whom the estate or interest is intended to pass, in the presence of one or more attesting witnesses; and also conveyances of mining claims heretofore made by bills of sale or instruments of writing, not under seal, shall have the same force and effect as *prima facie* evidence of sale, as if such conveyances had been made by deed under seal; *provided*, that nothing in this act shall be construed to interfere with or repeal any lawful local rules, regulations, or customs of the mines in the several mining districts of this State; and *provided*, further, every such bill of sale or instrument in writing shall be deemed and held to be fraudulent and void as against all persons except the parties thereto, unless such bill of sale or instrument in writing be accompanied by an immediate delivery to the purchaser of the possession of the mining claim or claims therein described, and be followed by an actual and continued change of the possession thereof, or unless such bill of sale or instrument in writing shall be acknowledged and recorded as required by law in the case of conveyances of real estate.

The *Colusa Sun* urges the planting of forest trees. It estimates the price of wood five years hence as double what it is now. One-half the wood has already been cut from the Sacramento and San Joaquin rivers as far up as they are navigable, and more than half the oak timber along the lines of the Sacramento Valley and Pacific Railroads.

**REDUCTION IN PRICES OF ASSAYS.**—The attention of our readers is called to the advertisement, in another column, of the San Francisco Assaying and Refining Works. It will be seen that the charges for unparted gold bars are one-half less than those which have so long ruled, and other charges in proportion.



## The Mineral Lands.

CIRCULAR IN RELATION TO MINING CLAIMS UNDER THE ACT OF CONGRESS APPROVED 26TH JULY, 1866. [U. S. STATUTES, PAGE 251, CHAPTER CCLXII.]

DEPARTMENT OF THE INTERIOR,  
GENERAL LAND OFFICE, January 14, 1867.

GENTLEMEN:—Herewith will be found the act of Congress approved 26th July, 1866, "granting the right of way to ditch and canal owners over the public lands, and for other purposes."

By the first section of this act all the mineral lands of the United States, surveyed and unsurveyed, are laid open to all citizens of the United States and to those who have declared their intention to become such, subject to statutory regulations, and also to the local customs and rules of miners in the several mining districts, not in conflict with the laws of the United States.

It therefore becomes your duty *in limine* to acquaint yourselves with the local mining customs and usages in the district in which you may be called upon to do those official acts which are required by the law, whether the same are reduced to authentic written form or are to be ascertained by the testimony of intelligent miners, which you are to obtain as occasion may require and justify in acting upon individual claims, a perfect record whereof is to be carefully taken and preserved by the Register and Receiver, and to be accompanied by a diagram or plat fixing the out-boundaries of the district in which such customs and usages exist.

The 2d section of the Act declares that "Whenever any person, or association of persons, claim a lode of quartz or other rock, in place, bearing gold, silver, cinnabar, or copper, having previously occupied and improved the same, according to the local customs or rules of miners in the district where the same is situated, and having expended in actual labor and improvement thereon an amount of not less than \$1,000, and in regard to whose possession there is no controversy or opposing claim, it shall and may be lawful for said claimant, or association of claimants, to file in the local Land Office a diagram of the same, so extended, laterally or otherwise, as to conform to the local laws, customs and rules of miners, and to enter such tract and receive a patent therefor, granting such mine, together with the right to follow such vein or lode, with its dips, angles and variations, to any depth, although it may enter the land adjoining, which land adjoining shall be sold subject to this condition."

Mining claims may be entered at any District Land Office in the United States, under this law, by any person or association of persons, corporate or incorporate. In making the entry, however, such a description of the tract must be filed as will indicate the vein, or lode, or part, or portion thereof claimed, together with a diagram representing by reference to some natural or artificial monument, the position and location of the claim and the boundary thereof, so far as such boundaries can be ascertained.

First—In all cases the number of feet in length claimed on the vein or lode shall be stated in the application filed as aforesaid, and the lines limiting the length of the claim shall also in all cases be exhibited on the diagram, and the course or direction of such end lines, when not fixed by agreement with the adjoining claimants, or by the local customs or rules of the miners of the district, shall be drawn at right angles to the ascertained or apparent general course of the vein or lode.

Second—Where, by the local laws, customs or rules of the miners of the district, no surface ground is permitted to be occupied for mining purposes except the surface of the vein or lode, and the walls of such vein or lode are unascertained, and the lateral extent of such vein or lode unknown, it shall be sufficient, after giving the description and diagram aforesaid, to state the fact that the extent of such vein or lode cannot be ascertained by actual measurement, but that the said vein or lode is bounded on each side by the wall of the same, and to estimate the amount of ground contained between the given end lines and the unascertained walls of the vein or lode, and in such cases the patent will issue for all the land contained between such end lines and side walls, with the right to follow such vein or lode, with all its dips, angles and variations to any depth, although it may enter the land adjoining, provided the estimated quantity shall be equal to a horizontal plane bounded by the end lines, and the walls on the sides of such vein or lode.

Third—Where by the local laws, customs or rules of miners of the district, no surface ground is permitted to be occupied for mining purposes except the surface of the vein or lode, and the walls of such vein or lode are ascertained and well-known, such walls shall be named in the description and marked on the diagram, in connection with the end lines of such claim.

Fourth—Where by the laws, customs or rules of miners of the district, a given quantity

of surface ground is fixed for the purpose of mining or milling the ore, the aforesaid diagram and description in the entry shall correspond with and include so much of the surface as shall be allowed by such laws, customs or rules for the purpose aforesaid.

Fifth—In the absence of uniform rules in any mining district limiting the amount of surface to be used for mining purposes, actual and peaceable use and occupation for mining or milling purposes shall be regarded as evidence of a custom of miners authorizing the same, and the ground so occupied and used in connection with the vein or lode, and being adjacent thereto, may be included within the entry aforesaid and the diagram shall embrace the same as appurtenant to the mine.

Where the claimant or claimants desire to include within their entry and diagram any surface ground beyond the surface of the vein, it shall be necessary upon filing the application to furnish the Register of the Land Office with proof of the usage, law or custom under which he or they claim such surface ground, and such evidence may consist either of the written rules of the miners of the district, or of the testimony of two credible witnesses to the uniform custom or the actual use and occupation as aforesaid, which testimony shall be reduced to writing by the Register and Receiver, and filed in the Register's office with the application, a record thereof to be made as contemplated under the first head in the foregoing.

By the 3d section of the act it is required that upon the filing of the diagram, as provided in the 2d section, and posting the same in a conspicuous place on the claim, with notice of intention to apply for a patent, the Register shall publish a notice of the same in a newspaper nearest the location of said claim, which notice shall state the name of the claimant, name of mine, names of adjoining claimants on each end of the claim, the district and county in which the mine is situated, informing the public that application has been made for patent for same; the Register also to post such notice in his office for ninety days.

Thereafter, should no adverse claim have been filed, it will become the duty of the Surveyor General upon application of the party to survey the premises and make plat thereof, endorsed with his approval, designating the number and description of the location, the value of the labor and improvements, and the character of the vein exposed. As preliminary to the survey, however, the Surveyor General must estimate the expense of surveying, planting, and ascertain from the Register the cost of publication of notice, the amount of all of which must be deposited by the applicant for survey with any Assistant United States Treasurer or designated depository in favor of the United States Treasurer, to be passed to the credit of the "Fund Created by Individual Depositors for the Surveys of the Public Lands."

Duplicate certificates of such deposits must be filed with the Surveyor General for transmission to this office, as in the case of deposits for surveys of public lands under the tenth section of the act of Congress approved May 30, 1862, and joint resolution of July 1, 1864.

After the survey thus paid for shall have been duly executed, and the plat thereof approved by the Surveyor General, designating the number and the description of the location, accompanied by his official certificate of the value of the labor and improvements, and character of the vein exposed, with the testimony of two or more reliable persons cognizant of the facts on which his certificate may be founded, as to the value of the labor and improvements, the party claiming shall file the same with the Register and Receiver, and thereupon pay to the said Receiver five dollars per acre for the premises embraced in the survey, and shall file with these officers a triplicate of deposit showing the payment of the cost of survey, plat and notice, with satisfactory evidence which shall be the testimony of at least two credible witnesses, that the diagram and notice were posted on the claim for a period of ninety days, as required by law. Thereupon it shall be the duty of the Register to transmit to the General Land Office said plat, survey and description, with the proof endorsed as satisfactory by the Register and Receiver, so that a patent may issue—if the proceedings are found regular—but neither the plat, survey, description, nor patent shall issue for more than one vein or lode.

The utility of the surveying system is to be maintained by extending over the mining districts the rectangular method, at least so far as township lines are concerned.

The contemplated surveys of the mineral lands will be made by District Deputies under contracts, according to the mode adopted in the survey of the public lands and private land claims, embracing in them all such veins or lodes as will be called for by claimants entitled to have them surveyed.

In consideration of the very limited scope of surveying involved in each mining claim, the per mileage allowed by law may not be adequate to secure the services of scientific surveyors,

and hence the necessity of resorting to a per diem principle, it being the most equitable under the circumstances.

The Surveyor General is therefore hereby authorized to commission resident mineral surveyors for different districts, where isolated from each other and absolutely inconvenient for one surveyor promptly to attend to the several calls for surveying such localities, the compensation not to exceed ten dollars per diem, including all expenses incidental thereto. Such surveyors shall enter into \$10,000 bonds for the faithful performance of their duties in surveying such claims as the Surveyor General may be required to execute in pursuance of the aforesaid law and these instructions.

The 4th section contemplates the location and entry of a mine upon unsurveyed lands, stipulating for the surveys of public lands, to be adjusted to the lines of the claims according to the location and possession and plat thereof. In surveying such claims the Surveyor General is authorized to vary from the rectangular form to suit the circumstances of the country, local rules, laws and customs of miners. The extent of the locations made from and after the passage of the act shall, however, not exceed 200 feet in length along the vein for each locator, with an additional claim for discovery to the discoverer of the lode, with the right to follow such vein to any depth, with all its dips, variations and angles, together with a reasonable quantity of surface for the convenient working of the same as fixed by local rules. Provided, no person may make more than one location on the same lode, and no more than 3,000 feet shall be taken in any one claim by any association of persons.

The Deputy Surveyors should be scientific men, capable to examine and report fully on every lode they will survey, and to bring in duplicate specimens of the ore, one of which you will send to this office and the other the Surveyor General will keep to be ultimately turned over, with the surveying articles, to the State authorities.

The Surveyors of mineral claims, whether on surveyed or unsurveyed lands, must designate those claims by a progressive series of numbers beginning with No. 37, so as to avoid interference in that respect with the regular sectional series of numbers in each Township, and shall designate the four corners of each claim, where the side lines of the same are known, so that such corners can be given, by either trees, if any are found standing in place, or any corner rocks exist in place, or posts may be set diagonally and deeply imbedded, with four sides facing adjoining claim, sufficiently flattened to admit of inscriptions thereon; but where the corners are unknown it will be sufficient to place a well built, solid mound, at end of the claim. The beginning corner of the claim nearest to any corners of the public surveys is to be connected by course and distance, so as to ascertain the relative position of each claim, in reference to Township and range when the same have been surveyed, but in those parts of the surveying district where no such lines have as yet been extended, it will be the duty of the Surveyor General to have the same surveyed and marked, at least so far as standard and Township lines are concerned, at the per mileage allowed, so as to embrace the mineral region and to connect the nearest corners of the mineral claims with the corners of the public surveys.

Should it, however, be found impracticable to establish independent base and meridian lines, or to extend township lines over the region containing mineral claims required to be surveyed under the law, then and in that case you will cause to be surveyed, in the first instance such a claim, the initial point of which will start either from a confluence of waters, or such natural and permanent objects as will unmistakably identify the point of the beginning of the survey of the claim, upon which other surveys will depend.

Section 5 provides that in cases where the laws of Congress are silent upon the subject of rules for working mines, respecting easements, drainage and other necessary means to the complete development of the same, the local legislation of any State or Territory may provide them, and in order to embody such enactments with patents, you are directed to communicate any such laws to this office.

Section 6. Should adverse claimants to any mine appear before the approval of the survey, all further proceedings shall be stayed until a final settlement and adjudication are had in the Courts of the rights of possession to such claim, except where the parties agree to settlement, or a portion of the premises is not in dispute, when a patent may issue as in other cases.

Section 7 provides for such additional land districts as may be necessary; Section 8 for the right of way; Section 9 for the protection of rights to the use of water for mining, agricultural, manufacturing or other purposes, for the right of way for the construction of ditches and canals, and makes parties constructing such work, after the passage of this act, to the injury of settlers, liable in damages.

Section 10. Homesteads made prior to the passage of this act by citizens of the United States or persons who have declared their intention to become citizens, but on which lands no valuable mines of gold, silver, cinnabar or copper have been discovered, are protected so that settlers or owners of such homesteads shall have a right of a pre-emption thereto, in quantity not to exceed 160 acres, at \$1.25 per acre, or to avail themselves of the Homestead Act and acts amendatory thereof.

Section 11 stipulates that upon the survey of the lands in question, the Secretary of the Interior may set apart such portions as are already agricultural, and thereafter subject such agricultural tracts to pre-emption and sale as other public lands.

In order to enable the Department properly to give effect to this section of the law, you will cause your Deputy Surveyors to describe in their field notes of survey, in addition to the date required to be noted in the printed manual of surveying instructions, on pages 17 and 18, the agricultural lands, and represent the same on township plats by the designation of "agricultural lands."

It is to be understood that there is nothing obligatory on claimants to proceed under this statute, and that where they fail to do so, there being no adverse interest, they hold the same relations to the premises they may be working which they did before the passage of this act, with the additional guarantee that they possess the right of occupancy under the statute.

The foregoing presents such views as have occurred to this office in considering the prominent points of the statute, and will be followed by further instructions, as the rulings in actual cases and experience in the administration of the statute may from time to time suggest.

Very respectfully your obedient servant,  
Jos. M. Wilson, Commissioner.  
To the United States Registers and Receivers and Surveyors General.

**DABOLL'S STEAM FOG TRUMPET.**—Our readers will remember our mention in a former issue, that one of these instruments had been ordered for the entrance to our harbor. It has arrived, and preparations for its erection are nearly completed. The building for its reception is about a third of a mile north of Arch Rock. It is a huge brazen trumpet, shaped like a fireman's, is about six feet long, and has in the "mouth-piece" a steel tongue, which vibrates when a column of air is forced through, giving a hoarse, unearthly blast, which can be heard for fifteen miles. It is worked by a small Ericsson engine. The furnace is kept constantly heated, and a watchman is always on hand to set it in operation upon occasion of fog by day, or darkness by night. This is a private enterprise of the Pacific Mail Steamship Company. The cost will be some \$5,000, besides the expense of keeping it up. Such a thing has long been needed, for the old fog bell was not always to be relied upon. It may be the salvation of many a poor fellow, who will in his heart bless, not the Government, but the P. M. S. Co. Without casting any reflection upon this company, it may be said, with truth, that in this case, at least, it is "bound to toot its own horn."

**SALT.**—Edward Gilman, says the Reese River *Reveille*, recently visited the Salt Mountain, situated sixty to seventy miles southeast of Pahranaagat. The salt lies under several feet of soil, which is removed and the solid deposit of beautiful salt is blasted in the same manner that ordinary rock is blasted, and is thrown out in huge blocks. Gilman brought in a number of fine large cubes of the salt. It is being worked slightly at present for the Pahranaagat District, to which it is hauled over a practicable road.

**JOHN PATTISON**, Superintendent of the Cunningham mine, near Nevada City, has devised an arrangement for the safety of the cars on inclines, similar to that used in shafts to prevent the falling of the cage in case of breaking of the rope.

A TWENTY-INCH navy gun, recently cast in Philadelphia, was successfully tested with charges of sixty, eighty, and one hundred pounds of powder, the shot weighing over one thousand pounds.

THE Utah Legislature have been laying before Congress the wonderful moral influence of polygamy.



## Scientific Miscellany.

(Reported for the Mining and Scientific Press.)

## Peat.

[Read before the California Academy of Natural Sciences, February 15th, 1907, by Louis Falkenau, of the Pacific Chemical Works.]

Ranking first among the most important conditions for the development of our race, the artificial production of heat has always been of the utmost importance to mankind; and I do not fear to incur the reproach of exaggerating, if I go so far as to say, that the history of civilization is closely allied to the gradual perfection of the means and ways of creating artificial heat.

Light and heat are indispensable, directly and indirectly, to the proper development of man; and the amount of both, offered by natural phenomena, does not suffice to elevate him far above the brute creation. Already, in the most remote periods of our existence as a race, as far as its records or its foot-prints, traced by the indefatigable eye of scientific research, are able to show, man has pressed his enemy, the flames, into his service, to prepare his food and to obtain the warmth necessary to his existence, when and where nature did not supply it. From these primitive uses the mighty agent heat has gradually but steadily been brought to bear upon all that the human mind has devised in the ages which elapsed, until it had reached its present compass, and to-day we find ourselves entirely dependent upon it for all that every-day life requires.

With the constant increase in the application of heat, the demand for fuel necessarily keeps pace, and all realms have been ransacked in search of materials which might serve as such. As in the great harmonious organism of nature, each want meets its supply, substances adapted for fuel are abundantly met with, and by some exercise of economy and judgment, by the utmost utilization of material, the vegetable and mineral sources of fuel should suffice to meet all our wants. Still, the vast consumption of fuel, in the civilized portion of our globe, has called into the field all our powers of scientific and practical knowledge, to increase our stock of caloric material, and to obtain therefrom its utmost yield of heat. How much there is still left undone in that direction, is proved by the fact, that according to a reliable author, 3,000,000 tons of coal are annually wasted in England, in the smelting of iron alone.

The forests, which for ages were the self-replenishing source of fuel, have been sadly thinned under the footsteps of civilization, and of course rarest and most distant in the densely populated districts where the largest demand for that fuel exists.

The fossil remains of vast forests, appertaining to distant periods of our terrestrial epoch, are now our chief resource, and coal in its different strata is wrought from the bowels of the earth to be consumed in the creation of heat.

Intermediate between wood and coal, we find a substance which, so to say, forms the transition from the former to the latter, viz., *PEAT*, which lately has become of some importance in our industrial economy. The formation of peat, which is constantly progressing, seems to be destined to provide new and vast deposits of fuel for a far distant period, when our coal beds shall have been partially exhausted, or become more difficult of access. The generation of peat takes place under conditions which vary as much as the nature of the product resulting from it.

Large, shallow and stagnant pools or marshes, are generally its birth-place. The lower orders of plants, which they produce after losing their vital powers, are gradually decomposed into their fundamental elements or binary combinations, of which those in form of gases escape; those soluble in water are dissolved, while the insoluble, non-volatile, remain as part constituents of a carboniferous sediment at the bottom of the pool. Generations upon generations of such plants succeed to each other, undergoing the same changes. On the banks of the pool, plants of higher orders find conditions favorable to their growth, and, encroaching

upon its banks, they add their stems, leaves, branches or trunks, to swell the carboniferous deposit. Gradually the pool is thus filled or reduced in its depth, and finally changed into mire. Higher classes of plants now follow, and finally numerous generations of these transform this great cemetery of plants into a more compact mass, rich in carbon, which we term peat.

Such is one mode in which peat may be formed; but, as aforesaid, the *modus* may greatly vary, according to the conditions offered by the soil, the climate, the species of vegetation peculiar to a locality, etc.

I purposely abstain from entering upon the botany of peat formation, as I would leave this point to be elucidated by members of the Academy, better qualified for the task; and the same reasons deter me from entering upon its geology, or attempting to draw conclusions as to the mode in which coal may have been generated, from the apparently similar process of the formation of peat.

Inundations by rivers or by the sea, frequently appear to give rise to the formation of peat deposits, which often cover immense areas. In these peat beds, layers of gravel, clay, shells, etc., often mark, interposing between different strata of peat, the different inundations which gave rise to them. The largest peat fields in the north of Germany cover two or three hundred square miles, and have an average depth of twenty feet. Great Britain contains 6,000,000 acres of peat ground, of an average depth of twelve feet, equal to 3,600 tons per acre, or a total of 21,600,000,000 tons.

The theory of peat formation indicates that it takes place to its greatest extent in the temperate zone, where stagnant pools may exist, as the evaporation by the heat of the sun does not interfere, and no great depression of temperature tends to hinder or retard the decomposition of organic matter.

Before I pass over to a more special description of the properties of peat, its applications, etc., I must mention that even to some of the more abstract, speculative sciences, peat deposits have proved of great interest. To the archaeologist, they have yielded rich harvests of utensils, weapons, etc., of past ages, and even one of the most celebrated linguists, Dr. Mueller, in his valuable work on the origin of languages, draws his conclusions as to the period of Indo-Germanic immigration into the north of Germany, from the order in which different species of trees follow upon each other, in the peat deposits of that region. No doubt my fellow members will be able to give us some interesting details on these subjects.

We generally distinguish "recent peat," and "older peat," the former being in a less advanced stage of decomposition, and bearing distinct marks of its origin in the shape of roots, leaves, stems, etc., still intact; the latter presenting a uniform mass, of greater density and darker color. Numerous names have been devised for different kinds of peat, such as grass peat, rush peat, etc.

All peat contains, in its natural state, a large amount of hygroscopic water, and of foreign mineral substances, derived from the soil. The former amounts, in the best kinds, to twenty-five per cent.; the latter varies from one to thirty-three per cent., and its specific gravity deviates from 0.1 to 1.039, the oldest being the most dense. The amount of carbon (its most valuable component) is exceedingly variable, and, in the best kinds, reaches as high as sixty-one per cent.

The value of peat as fuel depends entirely upon the proportion of carbon, of mineral substances, and of water contained in it; both of the latter impairing its value, not only by increasing its bulk, but also occasioning a loss of part of the heat, which the carbon contained in it might yield, as the water absorbs a certain amount of heat in being transformed into vapor, while the mineral substances, by enclosing the particles of carbon, render their perfect combustion more difficult. These deteriorating components have greatly impeded the introduction of peat in the arts and manufactures. Yet, by drying the crude product, by washing and compressing it, its objectionable qualities may be greatly modified, and the product thus obtained, the "pressed peat," or "machine peat," has found manifold application as well as the better kinds of peat.

By charring peat in a similar manner as wood is charred, or coal transformed into coke, a valuable product—peat charcoal—is obtained. The value of the best kind of peat for caloric purposes, compared to wood, is almost double that of the latter, four-fifths that of charcoal, equal to brown coal, and about four-fifths that of anthracite, while the poorest quality only reaches about one-third of those figures. Besides the

components hitherto named, peat often contains other ingredients, resulting from incomplete decomposition of organic matter. None of these, however, are of great importance. If peat is subjected to dry distillation—that is, heating under exclusion of air—it yields pyroligneous acid, empyreumatic oils, paraffine, carbonic acid, ammonia, solar oil, photogen, etc. This fact has led to its distillation, on a large scale, to obtain these products. Illuminating gas has also been made from it. For metallurgical purposes, peat charcoal has been used to some extent, especially in the manufacture of iron.

The foregoing is all I can say on the subject without entering into technical details. Such as it is, I hope it may lead to the discussion of some points which more strictly appertain to natural sciences, and may serve to further elucidate; that objects of technological research may prove of interest to the naturalist, and that the great principle of the universality of science, which characterizes our age, is constantly interweaving the different disciplines of human knowledge, making them subservient to each other, while it links them, inseparably, to the triumphal chariot of progress, enlightenment and civilization.

NOTE.—Researches are now in progress at the laboratory of the Pacific Chemical Works as to the value of different species of peat found in California, which, when completed, will be communicated to the Academy by Messrs. Falkenau & Hanks.

## Metals which Alloy with Iron.

**GOLD AND IRON** readily unites by fusion and in all its states, as malleable iron, cast iron, and steel. The gold facilitates the fusion of iron. By stirring gold in a state of fusion with an iron rod, it will dissolve a small quantity of the iron. The presence of gold produces no bad effect upon the iron. Equal parts of gold and iron give a grayish, brittle mass that is attracted by the magnet. Six parts of gold and one of iron form a white alloy which is ductile when cold, and with a moderate heat becomes red, yellow and blue. Nine parts of iron and one part of gold form an alloy which resists the file unless previously subjected to a red heat. With twenty-eight parts of iron and eight of gold the alloy is of a silver white color and rather more ductile than iron. Eleven parts of gold and one of iron form a very ductile alloy, but harder than gold and of great resisting power. It is of a pale yellowish gray color, inclining to a dirty white. When the alloy contains one-twelfth of iron, it is of a pale yellowish color; when containing from a fifth or sixth, it is of a yellow gray color. An alloy of three or four parts of iron for one of gold is of grayish white color and very hard.

**SILVER AND IRON.**—An alloy of equal parts of iron and silver has the color of silver, considerable ductility, great hardness, and less elasticity than silver. Silver combined with one-fifth of iron becomes hard and loses its tenacity and malleability. It has been asserted that an addition of fifteen per cent. of fine silver to iron during the refining operation sensibly deteriorates the quality of the iron, and during the process of forging, the metal becomes scaly, cracked at the edges, and resembles hot-short iron. This would imply that it had in some slight degree the same effect as sulphur on the iron.

**PLATINUM AND IRON** combine readily. Native platinum is often found alloyed with iron. Platinum unites more readily with pig iron than with ductile iron. With three parts of pig iron and one part platinum the alloy is excessively hard, but possesses some ductility. With equal parts of iron and platinum it forms a crystalline alloy quite fusible, susceptible of a fine polish that does not tarnish in the air. Platinum combined with iron is readily acted upon by acids and is completely dissolvable in nitric acid.

**LEAD AND IRON** do not readily combine. It has been the subject of many experiments, but with no marked results. Dr. Ure affirms that iron does not unite with lead so long as both those substances preserve the metallic form. Iron ores frequently contain lead. If lead be added to an alloy of iron and silver, the lead seizes upon the silver, and isolates the iron, which will swim on the surface of the lead and silver.

**ZINC.**—An alloy of iron and zinc is doubted by many chemists. It would seem almost impossible to unite them, the one being refractory and the other somewhat volatile. The alloy of the two metals is often found in certain ores. According to M. Hekeln, zinc and iron form an alloy, hard, sensible to the magnet, and resembling silver. But he does not indicate the proportion of the two metals, nor the manner in which the combination is effected; it would seem possible that the zinc might be added to the iron when the latter is in a state of fusion,

but the zinc will be volatilized by the high temperature of the molten iron.

**ALUMINUM** combines with iron. A mixture containing 0.064 of aluminum and some of carbon by being kept under fusion during a considerable time, produced a mixture of highly carburized steel aluminum. The alloy is white, very brittle, and with a granular texture. Aluminum does not seem to exert an injurious influence on the tenacity of the iron.

**ANTIMONY AND IRON** readily unite by fusion. The two metals have great affinity for each other. Their alloys are more fusible than iron, and are white, hard and very brittle. An alloy of one part of antimony to one hundred parts of cast iron produces a grayish white alloy, and on being filed, of a bright steel-gray color. An alloy of two parts antimony and one hundred of iron produces a very hard, brittle alloy, of a gray white color, with but little luster. Of three parts antimony and one hundred of iron, very brittle and of a grayish white color, somewhat brilliant. With five per cent. of antimony the fracture of the alloy resembles that of zinc.

**COPPER AND IRON** have little affinity for each other. It is difficult to unite them directly on account of the refractory nature of the iron. By melting the two metals together, it is found that the iron unites with the copper in the form of grains. The alloy is gray and brittle. A forty-eighth part of iron renders copper magnetic. Copper augments the tenacity and hardness of the iron.

**TIN** unites into alloy with iron in all proportions. With equal parts of tin and iron it gives a brittle mass of grayish-white color, with a granulated fracture. Two parts iron and one of tin give an alloy not very malleable and too hard to be pared with a knife. Twenty-one parts of tin and one of iron is very malleable, but harder than tin and not so brilliant. With one part of iron and two of tin, the alloy has a dark gray fracture and is attracted by the magnet. With five parts of tin and one of iron is called Biber's alloy, and is used for tinning copper. It is slightly malleable when cold, brittle when hot, has a steel-gray granular texture, and may be cut with scissors. It can be made by melting together tin and the shavings of tin plate. Cast iron containing tin is very sonorous, receives a beautiful polish, has a texture as fine as steel, is very hard, does not break as readily or rust as easily as common cast iron.

**MANGANESE** unites readily with iron; where the proportion of the latter metal is considerable, it makes iron harder, whiter, and more brittle. Iron in alloy with this metal is the best for making steel. Manganese diminishes the fusibility of iron and increases its ductility. An alloy composed of 0.745 of iron and 0.255 of manganese is whiter than iron, shining, very brittle, and has a fine grain.

**MOLYBDENUM** unites with iron the most readily of all metals. With equal parts of each, the alloy is fusible with the blow-pipe, of a bluish-gray color, quite hard and brittle. One part of iron with two parts of molybdenum forms a combination of a clear gray color, but not fusible with the blow-pipe, very brittle, of fine granulous texture, and obeying the magnet. An alloy containing 0.20 of molybdenum is fusible, whiter than iron, extremely hard and brittle, and of great tenacity, the fracture being equal and granulous.

**NICKEL** unites readily with iron and produces a soft and tenacious alloy. Five parts of nickel and two parts of iron give an alloy moderately hard, quite malleable, and of the color of steel. The iron of aerolites contains from three to ten per cent. of nickel. Iron with ten per cent. of nickel forms an alloy somewhat malleable and easily broken under the hammer; has a yellow tinge when polished, is very slightly affected by humidity.

**COBALT AND IRON** combine by fusion. It can be both forged and welded; is somewhat brittle when hot, but it is not so when cold. The alloy is magnetic and whiter than pure iron.

**CHROMIUM** has a great affinity for iron and readily forms alloys in all proportions. The compounds are hard, brittle, crystalline, and of a grayish white than iron, and having some luster. An alloy of 0.60 of chromium and 0.40 of iron is whiter than platinum, and so hard as to cut glass, and so brittle that it can be powdered in an agate mortar.

**ARSENIC AND IRON** combine by fusion in any proportions. With a large amount of arsenic the magnetic character of iron disappears. The alloy is more or less white, hard, brittle and fusible, according to the amount of arsenic. One part of arsenic and two parts of iron is of a gray white color, very brittle and more fusible than iron. A very small quantity of arsenic suffices to effect the malleability of iron and renders it brittle when cool. It cannot be welded.



## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
February 23, 1907.  
MONEY MARKET.

There is now a large amount of idle capital in this city, and the accommodations of bankers and others to merchants are made on very easy terms. For several months past real estate transactions in San Francisco have absorbed a very large share of the surplus money belonging to persons of comparatively small means, and at present no abatement is noticeable in this class of investments. The Savings Banks continue to receive accessions to their already large deposits, and in most instances loans are obtained at 1 per cent. per month from these institutions as well as from most of the other private banks— $1\frac{1}{4}$  to  $1\frac{1}{2}$  per cent. being for the most part outside rates.

During the week under review a small amount of 7-30 Bonds sold in the Board at  $78\frac{3}{4}$  c. Legal Tender Notes rule at  $73\frac{1}{2}$  to  $74$  c. The latest telegraphic advices from New York quote gold at  $136\frac{1}{4}$ , and Sterling at 109.

## CITY STOCKS.

The city share market exhibited little activity during the past week, and the offerings as a general thing were unusually light. The new stock of the Pacific Insurance Company sold at  $117\frac{1}{2}$  per cent., seller 30, and 120 per cent. Fireman's Fund Insurance Company, to the extent of 100 shares, realized  $102\frac{1}{2}$  per cent., and San Francisco Gas sold at \$69 per share, and at the close \$68 $\frac{1}{2}$  is bid. California Steam Navigation Company sold at  $62\frac{1}{2}$  to  $63$  per cent. For Spring Valley Water Company 67 per cent. was asked on the 21st instant. For Union Insurance Company 109 is bid, and for National Insurance Company 73. The receipts of the San Francisco street railroads during the month of January, as obtained from the books of the Revenue Department, were as follows: North Beach and Mission Railroad, \$17,166; Omnibus Railroad, \$18,804; Central Railroad, \$10,607; Front street M. and O. R., \$4,863; Market street Railroad, \$3,595.

## MINING SHARE MARKET.

The mining share market has exhibited considerable life this week, large sales have been made, and for the most part prices have been well sustained. The inclemency of the weather has prevented the receipt of full advices from the mines, but so far as we can learn, no material change has taken place worthy of special note.

HALE & NORCROSS—continues very firmly held, no public sales having been made during the past week; we learn, however, that one foot was privately disposed of at \$3,000. At the close \$2,900 is bid. This mine steadily maintains the excellent reputation it has enjoyed for a year past, and we are informed that at the next annual meeting of the stockholders, to be held in March next, a very flattering report of the condition of the company's affairs will be made.

SAVAGE—sold at fluctuating rates, opening at \$1,900, buyer 3, declining to \$1,800 at \$1,775, recovering to \$1,900, and closing on Thursday at \$1,980, seller 30. During the week ending February 16th, 1,805 tons of ore were taken from the mine, showing an assay value of \$63,509, being an average yield of \$35.18 per ton; the previous week the assay value of the 1,182 tons produced was \$33.62 per ton. The largest proportion of ore continues to be taken from the Curtis shaft—729 tons coming from that point during the week under review, and 673 tons from the seventh station. The second station drift from the Curtis shaft, which is being carried north toward the 7th station in the old works, is said to look well, the deposit of ore being wide and of a good average quality. Most of the Curtis shaft product is taken from this locality. It is also stated that the breasts on the lower station, south mine, look better than for some time past. The Curtis shaft has now been sunk to a depth of 80 feet below the seventh station.

CROWN POINT—rose from \$860 to \$950, then sold at \$880, and closed at \$900. During the week ending the 15th instant, 847 tons of ore were raised; previous week, 897 tons. We learn of no material change in the mine since our last report. Considerable prospecting was done during the first half of the present month without any results of a very encouraging nature; however, the mine gives its usual yield of ore from points heretofore developed. The bullion returns so far this month are said to equal those of a corresponding period in January.

YELLOW JACKET—steadily declined from \$785, the closing price of last week, to \$678 and \$665, then rallied to \$720, and closed on the 21st at \$694. This mine produced 1,854 tons of ore from the 1st to the 11th instant, and the yield of bullion during the same time amounted to \$19,204.64. During the period embraced between the 1st and 14th of the previous month, three days more than the report of the present month, the ore extracted aggregated 2,780 $\frac{1}{2}$  tons, and the bullion returns amounted to \$41,518. If these yields are to be taken as the product of the ore extracted during the several periods, and the statements give us no other explanation, we obtain a fraction over \$10 per ton for the former and \$15 per ton for the latter, certainly a very unremunerative yield. This company during the first half of the present month employed on an average 222 men per day, of which number 93 were extracting ore and 40 were engaged in prospecting.

GOULD & CURRY—has been in little request, selling at \$545 to \$550, receding to \$512.50, and closing at \$520. We have nothing of special interest to report from this mine. We learn that work both at the mill and mine is progressing very favorably, exhibiting judicious and economical management in every department.

CHOLLAR-POTOSI—was dealt in to a large extent at enhanced rates, advancing from \$225 to \$240, receding to \$233, improving to \$246, and closing at \$250 seller 15. During the week ending Feb. 16th, 1,140 tons of ore were sent to custom mills, being 80 tons more than in the previous week. The ore, in going south on the Blue Wing station, is said to be of good quality and some 18 feet wide, and the developments below this station continue to look well. The north winze on the first station of the new shaft is down 20 feet, and an average assay of the ore shows \$150 to the ton. In the third station, new shaft, which is 720 feet from the surface, the east clay wall has been reached.

OPHIR—has been in favor at an advance, selling within a range of \$180 to \$200, and closing at \$220 seller 30. IMPERIAL—advanced from \$170 to \$185, and on Thursday \$185 per share was bid. The receipts of bullion by this company up to the 17th instant amounted to about \$32,000. The dump at the Alta mine is full and the ore shows an improvement in quality. A large supply of ore remains on hand at both mills.

EMPIRE—has been more freely dealt in, advancing from \$180 to \$190, and closing at \$187.50 seller 30. BELCHER—sold at \$120, then at \$117.50, and closed at \$112.50. BULLION—receded from \$19 to \$13, and at the close sold at \$17. CONFIDENCE—varied little from \$18 per share, closing at \$17. OVERMAN—is exceedingly quiet; sold at \$16.50 during the week. DANBY—sold to a considerable extent at \$8 to \$5, closing at \$5.50 seller 30, and a few feet of SIERRA NEVADA at \$3.50. An assessment of \$4 per share was levied on the latter on the 15th instant.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$819,005.

PACIFIC HYGIENIC HOME WATER CURE, at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated). B. J. SMITH, M. D., Consulting Physician; R. S. MACBETH, M. D., Attending Physician; W. G. W. HAARFORD, Manager; H. ANDREWS, Business Agent. Office, Baths and Lecture Hall, No. 627 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 16v13-1f

OLNEY & Co., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. nolo

NATURAL CURIOSITIES FOR CHRISTMAS.—At No. 522 Pine street, E. F. LORINCIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shells, and Wax Flowers, besides Feathered, Birds and Butterflies, for ladies' hats, Shells, Sea-weeds, etc. 24v13-qr

Air Pump for Sale.—One of Tate's Double-Action Air Pumps, in prime order, can be had at a bargain, by applying soon at this office, or to JOHN ROACH, mathematical instrument maker, 523 Montgomery street. 21v13-3p

## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

## Saturday, February 16.

96 shs Ophir at 190 per foot, s 30.  
12 shs Ophir at 183 per foot, s 30.  
24 shs Ophir at 190 per sh, s 20.  
95 shs Ophir at  $192\frac{1}{2}$  to 190 per foot.  
1 sh Savage at 1900 per foot.  
2 shs Savage at 1840 per foot.  
1 sh Savage at 1865 per foot, b 30.  
2 shs Savage at 1830 per foot, s 30.  
1 sh Savage at 1840 per foot, s 30.  
1 sh Savage at 1810 per foot, s 10.  
40 shs Chollar-Potosi at 225 per ft.  
30 shs Chollar-Potosi at 223 per foot.  
100 shs Chollar-Potosi at 238 per foot, s 30.  
92 shs Chollar-Potosi at 230 per foot, s 30.  
15 shs Overman at 165 per share.  
8 shs Yellow Jacket at 785 per foot.  
3 shs Yellow Jacket at 775 per foot.  
4 shs Yellow Jacket at  $795\frac{1}{2}$  to 785 per ft h 30.  
1 sh Yellow Jacket at 780 per foot.  
2 shs Yellow Jacket at 770 per foot.  
5 shs Empire M & M Co. at 180 per sh.  
2 shs Belcher at 120 per foot.  
25 shs Bullion at 19 per share.  
25 shs Bullion at 18 $\frac{1}{2}$  per share.  
6 shs Bullion at 19 per share, h 10.  
5 shs Bullion at 18 per share, s 10.  
4 shs Crown Point at 870 per share h 30.  
4 shs Crown Point at 870 per ft, s 30.  
16 shs Crown Point at 870 per foot.  
16 shs Crown Point at 860 per foot.  
20 shs Imperial at 165 per share.  
26 shs Imperial at 170 per share.  
7 shs Confidence at 18 per share.  
1 sh Cal Steam Nav Co at  $52\frac{1}{2}$  per share.  
Amount of sales.....\$104,961 00

## Monday, February 18.

40 shs Confidence at 19 per share.  
45 shs Confidence at 20 per share.  
10 shs Confidence at 20 per share, s 30.  
5 shs Confidence at  $20\frac{1}{2}$  per share.  
20 shs Daney at 7 per foot.  
36 shs Ophir at 190 per foot, s 30.  
21 shs Ophir at 195 per foot, b 30.  
21 shs Ophir at 192 $\frac{1}{2}$  per foot.  
67 shs Chollar-Potosi at 240 to 236 per foot.  
7 shs Chollar-Potosi at 230 per foot, b 30.  
10 shs Chollar-Potosi at 235 to 236 per ft s 30.  
8 shs Crown Point at 895 per foot.  
4 shs Crown Point at 900 per foot.  
8 shs Gould & Curry at 950 per foot.  
8 shs Gould & Curry at 650 per foot.  
20 shs Bullion at 18 per share.  
30 shs Bullion at 17 $\frac{1}{2}$  per share.  
4 shs Imperial at 171 per share.  
5 shs Imperial at 171 $\frac{1}{2}$  per share.  
6 shs Empire M. & M. Co. at 189 pr sb, s 10.  
10 shs Yellow Jacket at 760 per foot.  
8 shs Yellow Jacket at 740 per foot.  
10 shs Yellow Jacket at 737 $\frac{1}{2}$  per foot.  
4 shs Yellow Jacket at 745 per foot.  
3 shs Yellow Jacket at 760 per foot, h 60.  
4 shs Savage at 1840 per foot.  
5 shs Savage at 1835 per foot.  
4 shs Savage at 1800 to 1825 per foot s 30.  
1 sh Savage at 1775 per foot, s 60.  
1 sh Belcher at 120 per foot.

## AFTERNOON SESSION.

12 shs Ophir at 190 per foot, s 30.  
60 shs Ophir at 183 per foot, s 30.  
12 shs Ophir at 190 per foot, b 30.  
120 shs Ophir at 194 per foot, b 30.  
25 shs Crockett at 23 $\frac{1}{2}$  per share.  
6 shs Daney nt 8 per foot.  
32 shs Imperial at 175 per share.  
1 sh Savage at 1800 per foot.  
1 sh Savage at 1790 per foot, s 30.  
6 shs Empire M & M Co. at  $182\frac{1}{2}$  per sh.  
1 sh Empire M & M Co. at 182 per sh.  
1 sh Confidence at 20 per share.  
27 shs Crown Point at 925 per foot.  
1 sh Yellow Jacket at 730 per foot s 3.  
1 sh Yellow Jacket at 725 per foot s 30.  
1 sh Yellow Jacket at 725 per foot.  
1 sh Yellow Jacket at 825 per foot, b 10.  
3 shs Yellow Jacket at 715 per foot.  
3 shs Yellow Jacket at 710 per foot.  
5 shs Yellow Jacket at 810 per foot.  
8 shs Yellow Jacket at 725 per foot h 30.  
5 shs Chollar-Potosi at 232 $\frac{1}{2}$  per foot.  
Amount of sales.....\$120,822 00

## Tuesday, February 19.

96 shs Ophir at 190 per foot.  
84 shs Ophir at 180 per foot.  
60 shs Ophir at 181 per foot.  
1 sh Empire M & M Co. at  $182\frac{1}{2}$ , s 30.  
1 sh Empire M & M Co. at 185 per sh s 30.  
20 shs Daney at 7 per share.  
10 shs Confidence at 20 per share.  
10 shs Confidence at 18 $\frac{1}{2}$  per share.  
3 sh Savage at 1775 per foot, s 60.  
4 shs Savage at 1770 per foot.  
5 shs Savage at 1775 per foot.  
21 shs Chollar-Potosi at 222 $\frac{1}{2}$  per foot s 10.  
10 shs Chollar-Potosi at 235 per foot s 10.  
5 shs Chollar-Potosi at 234 per foot b 10.  
10 shs Chollar-Potosi at 233 per share, s 30.  
10 shs Chollar-Potosi at 240 per share b 30.  
100 shs Chollar-Potosi at 233 per foot.  
32 shs Chollar-Potosi at 237 $\frac{1}{2}$  per foot.  
4 shs Gould & Curry at 524 per foot.  
5 shs Sierra Nevada at  $3\frac{1}{2}$  per share.  
14 shs Imperial at 180 per share.  
25 shs Bullion at 15 per foot.  
30 shs Bullion at 13 per share.  
5 shs Bullion at 14 per share b 10.  
20 shs Bullion at 15 to 14 per share h 20.  
12 shs Bullion at 14 $\frac{1}{2}$  per share.  
12 shs Crown Point at 935 per foot.  
12 shs Crown Point at 950 per foot.  
28 shs Crown Point at 930 to 921 $\frac{1}{2}$  per ft s 30.  
10 shs Yellow Jacket at 710 per foot.  
8 shs Yellow Jacket at 690 per foot.  
1 sh Yellow Jacket at 680 per foot s 10.  
1 sh Yellow Jacket at 675 per foot s 10.  
3 shs Yellow Jacket at 740 per foot, b 30.  
1 shs Yellow Jacket at 690 per foot, h 30.  
1 sh Yellow Jacket at 675 per foot h 10.  
1 sh Yellow Jacket at 675 per foot.  
1 sh Yellow Jacket at 672 $\frac{1}{2}$  per foot.  
100 shs Fireman's Fund Ins. at 102 $\frac{1}{2}$  per sb.

## AFTERNOON SESSION.

10 shs Chollar-Potosi at 237 per share.  
7 shs Chollar-Potosi at 236 per foot.  
20 shs Chollar-Potosi at 240 per foot h 30.  
5 shs Savage at 1830 per foot.  
1 sh Savage at 1795 per foot.  
1 sh Savage at 1775 per foot, s 60.  
7 shs Savage at 1800 per foot.  
10 shs Bullion at 15 $\frac{1}{2}$  per share.  
20 shs Crown Point at 940 per foot.  
8 shs Crown Point at 930 per foot.  
4 shs Crown Point at 940 per ft, h 30.  
8 shs Crown Point at 925 per foot.  
2 shs Yellow Jacket at 665 per foot, s 10.  
2 shs Yellow Jacket at 660 per foot, s 10.  
6 shs Yellow Jacket at 670 per foot, s 30.  
6 shs Yellow Jacket at 680 per foot s 30.  
2 shs Yellow Jacket at 655 per foot h 10.  
2 shs Yellow Jacket at 650 per foot h 10.  
2 shs Yellow Jacket at 695 per foot b 30.  
1 sh Yellow Jacket at 690 per foot s 60.  
1 sh Yellow Jacket at 650 pr ft s 60.  
20 shs Yellow Jacket at 665 per foot.  
5 shs Yellow Jacket at 635 per foot.  
2 shs Yellow Jacket at 677 $\frac{1}{2}$  per foot.  
5 shs Yellow Jacket at 680 per foot.  
Amount of sales.....\$182,001 00

## Wednesday February 20.

120 shs Ophir at 190 per foot.  
12 shs Gould & Curry at 510 per foot.  
12 shs Gould & Curry at 512 $\frac{1}{2}$  per foot.  
29 shs Crown Point at 950 to 900 per foot s 30.  
4 shs Crown Point at 900 per foot, s 30.  
16 shs Crown Point at 900 to 912 $\frac{1}{2}$  per foot.  
4 shs Crown Point at 910 per foot h 30.  
40 shs Chollar-Potosi at 230 per foot.  
49 shs Chollar-Potosi at 246 per foot.  
11 shs Chollar-Potosi at 240 per foot, s 10.  
10 shs Chollar-Potosi at 240 per ft s 30.  
10 shs Chollar-Potosi at 230 per foot, h 30.  
10 shs Daney at 5 per share.  
15 shs Confidence at 18 $\frac{1}{2}$  per share.  
10 shs Imperial at 183 per share.  
11 shs Imperial at 185 per share.  
10 shs Savage at 1800 per foot.  
3 shs Savage at 1815 per foot.  
2 shs Savage at 1810 per foot, s 15.  
2 shs Savage at 178 to 1775 per foot, s 60.  
1 sh Savage at 1810 per foot, s 15.  
1 sh Savage at 1825 per foot b 30.  
2 shs Yellow Jacket at 690 per foot s 10.  
10 shs Yellow Jacket at 690 per foot.  
10 shs Yellow Jacket at 690 per foot.  
1 sh Yellow Jacket at 667 $\frac{1}{2}$  per foot h 10.  
4 shs Yellow Jacket at 623 $\frac{1}{2}$  per foot h 10.  
1 sh Yellow Jacket at 670 per foot.  
1 sh Yellow Jacket at 665 per ft, s 30.  
1 sh Belcher at 120 per foot.  
1 sh Belcher at 117 $\frac{1}{2}$  per foot.

## AFTERNOON SESSION.

6 shs Gould & Curry at 515 per foot.  
3 shs Savage at 1790 per foot, s 60.  
2 shs Savage at 1825 per foot.  
2 shs Savage at 1800 per foot.  
1 sh Savage at 1880 per foot s 10.  
2 shs Savage at 1890 per foot.  
2 shs Savage at 1885 per foot.  
15 shs Chollar-Potosi at 246 to 234 per ft s 30.  
9 shs Chollar-Potosi at 240 to 218 per sh h 30.  
43 shs Chollar-Potosi at 243 to 245 per ft.  
5 shs Crown Point at 954 per foot s 10.  
5 shs Chollar-Potosi at 246 per foot, b 3.  
36 shs Ophir at 190 per foot.  
5 shs Confidence at 18 per share, s 30.  
25 shs Confidence at 18 per share.  
4 shs Crown Point at 990 per foot, h 30.  
8 shs Crown Point at 880 per foot.  
4 shs Crown Point at 870 per foot.  
10 shs Yellow Jacket at 700 per foot.  
7 shs Yellow Jacket at 720 per foot.  
2 shs Yellow Jacket at 705 per foot, s 60.  
3 shs Yellow Jacket at 700 per foot, s 60.  
1 sh Yellow Jacket at 710 per foot.  
3 shs Yellow Jacket at 710 per foot, b 10.  
1 sh Yellow Jacket at 715 per foot, s 16.  
4 shs Yellow Jacket at 700 per foot.  
5 shs Empire M & M Co. at 110 pr sh h 10.  
83 shs San Francisco Gas Co. at 69 per ct.  
\$5,000 U. S. 7-30 Bonds June issue at 78 $\frac{1}{2}$  c.

Amount of sales.....\$220,809 00

## Thursday, February 21.

6 shs Chollar-Potosi at 248 per foot, b 30.  
23 shs Chollar-Potosi at 242 to 245 per foot.  
15 shs Chollar-Potosi at 241 to 245 pr ft s 30.  
4 shs Belcher at 110 per foot.  
10 shs Bullion at 14 $\frac{1}{2}$  to 15 per share.  
6 shs Bullion at 16 $\frac{1}{2}$  per share b 10  
3 shs Savage at 1900 per foot s 60.  
4 shs Savage at 1920 to 1910 per foot s 30.  
2 shs Savage at 1940 to 1925 per foot.  
60 shs Daney at 5 $\frac{1}{2}$  to 5 per foot.  
45 shs Ophir at 215 to 220 per foot.  
84 shs Ophir at 210 to 215 per foot s 30.  
12 shs Ophir at 110 per foot h 5.  
8 shs Gould & Curry at 520 per foot.  
6 shs Empire M & M Co. at 189 to 190 pr sh.  
6 shs Empire M & M Co. at 190 per sh s 10.  
1 sh Empire M. & M. Co. at 194, h 10.  
8 shs Crown Point at 880 per foot, s 30.  
12 shs Crown Point at 892 $\frac{1}{2}$  to 890 per ft.  
6 shs Yellow Jacket at 716 to 715 per ft.  
4 shs Yellow Jacket at 710 to 717 $\frac{1}{2}$  pr ft h 10.  
4 shs Yellow Jacket at 720 per foot h 30.  
8 shs Yellow Jacket at 707 $\frac{1}{2}$  to 705 per ft s 30.  
20 shs Yellow Jacket at 710 to 715 per foot.  
2 shs Yellow Jacket at 710 per foot s 20.  
3 shs Yellow Jacket at 710 per foot.  
1 sh Yellow Jacket at 707 $\frac{1}{2}$  per foot s 30.  
1 sh Cal Steam Nav Co at 63 pr ct.  
10 shs Pacific Insurance at 117 per sh s 30.  
13 shs Pacific Ins. Fund at 120 per share.

## AFTERNOON SESSION.

60 shs Ophir at 210 to 212 per foot s 30.  
163 shs Ophir at 200 to 225 per foot, h 30.  
60 shs Ophir at 220 to 220 per foot.  
60 shs Confidence at 17 per share.  
5 shs Empire M & M Co. at 190 per sh, b 5.  
2 shs Empire M & M Co. at 187 $\frac{1}{2}$ , s 30.  
7 shs Savage at 1930 to 1890 per foot s 30.  
4 shs Savage at 2000 per foot, h 30.  
8 shs Savage at 2000 to 1890 per foot.  
10 shs Bullion at 15 $\frac{1}{2}$  per foot.  
3 shs Yellow Jacket at 700 to 710 per ft b 10.  
1 sh Yellow Jacket at 700 pr ft s 30.  
1 sh Yellow Jacket at 695 pr ft s 30.  
18 shs Yellow Jacket at 710 to 695 per ft.  
9 shs Yellow Jacket at 700 to 692 $\frac{1}{2}$  pr ft.  
2 shs Belcher at 115 to 120 per foot, b 30.  
2 shs Belcher at 115 to 120 per foot.  
5 shs Chollar-Potosi at 235 per foot h 30.  
15 shs Chollar-Potosi at 240 to 240 per ft h 30.  
58 shs Chollar-Potosi at 218 to 231 per foot.  
8 shs Chollar-Potosi at 231 to 231 per foot.  
7 shs Chollar-Potosi at 231 to 230 pr ft.  
Amount of sales.....\$190,411 50



## MINING SHAREHOLDERS' DIRECTORY.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, DATE AND AM'T OF ASSESSMENT.	DAY OF DELINQUENT SALE.	DAY OF PAYMENT OF DIVIDENDS.
Abernethy, Gold Hill, Jan 1st, \$5.	Feb 1—March 5	Feb 1—March 5
Arizona Cons. Eureka Dis. Jan 1st, \$5.	Feb 1—March 5	Feb 1—March 5
Baldwin, Gold Hill, Jan 1st, \$5.	Feb 1—March 5	Feb 1—March 5
Blue Ledge, El Dorado Co.	Meeting Feb 23	Meeting Feb 23
Belcher, Gold Hill, Jan. 1, \$15.	Feb 1—March 5	Feb 1—March 5
Sig Blue Lead, Kern Co., Cal., Jan 3, \$10.	Feb 18—Mar 12	Feb 18—Mar 12
Baltimore Amer., Gold Hill, Nev., Jan 12, \$5.	Feb 18—Mar 12	Feb 18—Mar 12
Belcher, Gold Hill, Jan 1, \$3.	Feb 1—March 5	Feb 1—March 5
Chilpaneca, Sonora, Mex. Jan 13, \$5.	Mar 8—Mar 25	Mar 8—Mar 25
Chloride Flat Butte Co., Cal., Jan 24, \$5.	Feb 25—Mar 15	Feb 25—Mar 15
Crown Point, Nev. dividend.	Payable Feb 15	Payable Feb 15
Confidence, Gold Hill, Nev., Feb 9, \$5.	Feb 15—Mar 16	Feb 15—Mar 16
Camargo, Lander Co., Nev., Feb 14, \$20.	Mar 29—May 21	Mar 29—May 21
Diamond Cop., Del Norte, Cal., Feb 4, \$2.	March 9—April 1	March 9—April 1
Danby, Lyon Co., Nev., Jan 22, \$50.	Feb 25—Mar 15	Feb 25—Mar 15
El Dorado, Nevada, dividend.	Annual Meeting Mar 4	Annual Meeting Mar 4
Empire M. & N. Nev. dividend.	Payable Feb 9	Payable Feb 9
Evieva Cons. Cop., Del Norte Co., Jan 14, \$25.	Feb 25—Mar 15	Feb 25—Mar 15
El Dorado, Geacchilley, L. 1, Jan 30, \$1.	Mar 4—Mar 21	Mar 4—Mar 21
El Dorado, Geacchilley, L. 2, Jan 30, \$1.	Mar 4—Mar 21	Mar 4—Mar 21
El Dorado, Geacchilley, L. 3, Jan 30, \$1.	Mar 4—Mar 21	Mar 4—Mar 21
Geo Washington, Alpine Co., Feb 5, \$3.	Mar 22—April 8	Mar 22—April 8
Gould & Curry, Virginia, Nev. dividend \$50.	Payable Jan 25	Payable Jan 25
Golden Rule, Cal., div.	Payable Dec 20	Payable Dec 20
Hop Gravel, Nev. Co., Cal., Jan 16, \$1.	Feb 21—March 11	Feb 21—March 11
Hale & Norcross, Virginia, Nev. div.	Payable Feb 15	Payable Feb 15
Imperial, Virginia, Nev. div. \$12.	Payable Feb 15	Payable Feb 15
J. L. & Co., Cal., Jan 9, \$1.50.	Mar 2—Mar 23	Mar 2—Mar 23
Julia, Virginia, Nev. Jan 10, \$1.	Feb 15—March 6	Feb 15—March 6
Jefferson Mineral M. & M., \$2.50.	Feb 23—Mar 30	Feb 23—Mar 30
Lady Bell Cop., Del Norte Co., Jan 11, 102.	Feb 25—Mar 15	Feb 25—Mar 15
La Blanca, Sonora, Mex., Jan 31, \$1.50.	Mar 12—Apr 12	Mar 12—Apr 12
Liberty, Urea, Mex.	Annual Meeting Mar 6	Annual Meeting Mar 6
Mt Tenabo, Lander Co., Nev., Feb 15, \$1.	Mar 21—Apr 11	Mar 21—Apr 11
North S. P. H. & R. Ass. \$12.50.	Feb 12—Mar 15	Feb 12—Mar 15
Ophir, Virginia, Nev. Jan 10, \$5.	Feb 14—Mar 15	Feb 14—Mar 15
Orville, Butte Co., Cal., Feb 14, \$3.50.	Mar 2—Mar 23	Mar 2—Mar 23
Patricia & Dolores, Mex., Feb 1, \$5.	Mar 5—Mar 22	Mar 5—Mar 22
Rattus, Cal., Jan 5, \$1.	Feb 8—Feb 25	Feb 8—Feb 25
San Rafael, Sonora, Mex., Jan 13, \$5.	Mar 8—Mar 30	Mar 8—Mar 30
Sikkyou, Sikkyou Co., Cal., Dec 10, \$5.	Jan 21—Mar 21	Jan 21—Mar 21
Savage, Virginia, Nev. dividend \$100.	Payable Feb 8	Payable Feb 8
Summer, Kern Riv. Co., Cal., Dec 29, \$5.	Feb 11—March 5	Feb 11—March 5
Santa Rosa, Virginia, Nev., Feb 1, \$5.	Mar 15—Mar 25	Mar 15—Mar 25
El Dorado, Geacchilley, L. 1, Jan 30, \$1.	Mar 4—Mar 21	Mar 4—Mar 21
Sierra Nevada, Storey Co., Nev., Feb 15, \$4.	Mar 21—Apr 15	Mar 21—Apr 15
Tuolumne M. & N., Tuolumne Co., Jan 3, \$1.	Jan 4—Feb 25	Jan 4—Feb 25
Whitaker, Lander Co., Nev., Feb 14, \$15.	Mar 29—May 21	Mar 29—May 21
Yosemite, Humboldt Co., Cal., Jan 26, \$1.75.	Mar 1—Mar 21	Mar 1—Mar 21
Yellow Jacket, Gold Hill, div. \$50.	Payable Jan 15	Payable Jan 15
Young Harmon, El Dorado Co., Feb. 14, \$2.	Mar 23—Apr 8	Mar 23—Apr 8

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	FRIDAY EVENING, FEBRUARY 22, 1867.
<b>MISCELLANEOUS STOCKS.</b>	
United States 7 1/2-10th Bonds, June Issue.	73 1/2 74
Legal Tender Notes.	73 1/2 74
California State Bonds, 7 1/2, 1857.	80 81
San Francisco City Bonds, 1851.	101 102
San Francisco City Bonds, 6 1/2, 1853.	80 81
San Francisco City and County Bonds, 6 1/2, 1853.	71 72
San Francisco City and County Bonds, 7 1/2, 1856.	80 81
San Francisco City and County Bonds, 7 1/2, 1858.	80 81
San Francisco City and County Bonds, 7 1/2, 1861.	81 82
San Francisco City and County Bonds, 7 1/2, 1863.	80 81
San Francisco City and County Bonds, 7 1/2, 1864.	80 81
San Francisco City and County Bonds, 7 1/2, 1865.	80 81
San Francisco City and County Bonds, 7 1/2, 1866.	80 81
San Francisco City and County Bonds, 7 1/2, 1867.	80 81
Sacramento City Bonds.	15 16
Sacramento County Bonds, 6 1/2.	57 58
Marysville Bonds, 1860.	75 76
Stockton City Bonds.	80 81
Yuba County Bonds, 10 1/2.	75 76
Santa Clara County Bonds, 7 1/2.	70 71
Butte County Bonds, 10 1/2.	70 71
San Mateo County Bonds, 7 1/2.	70 71
California Steam Navigation Co.	62 1/2 63 1/2
Spring Valley Water Co.	67 68
State Telegraph Co.	31 32
<b>GAS COMPANIES.</b>	
San Francisco Gas Co.	62 1/2 63 1/2
Sacramento Gas Co.	60 61
<b>RAILROADS.</b>	
Sacramento Valley Railroad.	40 41
San Francisco and San Jose Railroad.	40 41
Omnibus Railroad.	40 41
Central Railroad.	40 41
North Beach and Mission Railroad.	49 50
Front Street, Mission and Ocean Railroad.	18 19
<b>BANKING INSTITUTIONS.</b>	
California Loan and Savings Society.	94 95
Bank of Pacific City and Loan Society.	94 95
The Bank of California.	133 134
<b>INSURANCE COMPANIES.</b>	
Fireman's Fund Insurance Co.	102 1/2 103
Pacific Insurance Co.	102 1/2 103
San Francisco Insurance Co.	102 1/2 103
San Francisco Marine Insurance Co.	102 1/2 103
California Insurance Co.	102 1/2 103
Union Insurance Co.	102 1/2 103
California Home Insurance Co.	102 1/2 103
Marine Mutual Insurance Co.	102 1/2 103
Occidental Insurance Co.	102 1/2 103
National Insurance Co.	102 1/2 103
<b>MINING STOCKS—WASHOE DISTRICT.</b>	
Alpha.	110 111
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Brilliant, G. H.	110 111
Crown Point.	110 111
Confidence.	110 111
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Eschscholtz.	110 111
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Imperial.	110 111
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Savage.	110 111
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## San Francisco Market Rates.

Wholesale Prices.	FRIDAY, FEBRUARY 22, 1867.
Flour, Extra, 35 lbs.	\$5.50
Flour, Superfine, 40 lbs.	\$5.00
Flour, 40 lbs.	\$4.50
Wheat, 100 lbs.	\$2.50
Oats, 100 lbs.	\$1.50
Barley, 100 lbs.	\$1.50
Hay, 100 lbs.	\$1.50
Potatoes, 100 lbs.	\$1.50
Lard, 100 lbs.	\$1.50
Live Oak Wood, 3 cord.	\$10.00
Beef, on foot, 3 lbs.	\$1.50
Beef, extra, dressed, 3 lbs.	\$1.50
Sheep, on foot, 3 lbs.	\$1.50
Hogs, dressed, 3 lbs.	\$1.50
<b>GROCERIES, ETC.</b>	
Sugar, crushed, 3 lbs.	\$1.50
Sugar, China, 3 lbs.	\$1.50
Office, Costa Rica, 3 lbs.	\$1.50
Do, Rio, 3 lbs.	\$1.50
Do, Java, 3 lbs.	\$1.50
Do, Green, 3 lbs.	\$1.50
Hawaiian Rice, 3 lbs.	\$1.50
China Rice, 3 lbs.	\$1.50

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And all CHEMICALS used in the Arts. They are prepared to make Chemical Investigations,

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**AUSTIN, NEVADA.**  
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**O. W. MAYNARD, J. D. TIEMANN,**  
**MAYNARD & TIEMANN,**  
Mining Engineers and Metallurgists,  
210 Pearl street, New York.

**CENTRAL CITY, COLORADO.**  
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EUROPEAN  
METALLURGICAL WORKS,

**Practical Mining School,**  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test Ores sent to this establishment—either in large or small quantities—by such process as may be found best adapted to their chemical character, after a careful analysis has been made. Test lots of Ore adapted to the smelting process attended to. Sulphur, pyrites, and the (so-called) "rebellious ores," are having especial attention paid to their successful treatment. Assaying in the humid and dry way. Also, refining by cupellation, done at moderate rates.

## PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications from gentlemen desirous of pursuing the study of practical metallurgy—have concluded to admit parties on reasonable terms. Having in their Mill all the necessary appliances for crushing, roasting, amalgamating, smelting, refining and assaying, as also a well extended Laboratory for the analysis of Ores and Minerals, a good opportunity is here offered to acquire a sound practical knowledge of the business.

**S. P. KIMBALL, J. R. MURPHY,**  
10v10

MOSHEIMER'S  
Metallurgic Works

And Practical School for Assaying and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLURGIC Works, and is prepared to reduce any kind of Ores, by Smelting, Amalgamating, or other processes, that the nature of the ore may require.

Practical Instructions given in Assaying, all branches of Metallurgy and Technology.  
Furnishes Plans and Estimates for the erection of Quartz Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating Ores, I can offer better concentrating machinery than any in use in California, and especially such as will save the fine or floating gold and sulphurets.

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328 Montgomery street, San Francisco.  
J. MOSHEIMER,  
Engineer and Metallurgist.

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SAN FRANCISCO, CAL.

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The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half day they are required to pay at hotels.

17v13-6m SANBORN & CO.

## PATENT BUSINESS.

We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent agency in New York city, and having a faithful and reliable associate in Washington City, we are now better than ever before prepared to secure the claims of our applicants, in a careful, prompt and efficient manner.

**DEWEY & CO.,**  
San Francisco, Jan. 1867. Patent Solicitors.

**Important to Californians.**—Many inventors have lately had their claims for Patents seriously and in some cases fatally delayed by the unqualification of agents who have not complied with the Government license and revenue laws, as well as other new and imperative regulations. These discrepancies, although arising from the inexperience of honest agents, are none the less dangerous to applicants for patents, whose safest course is to trust their business with none but active and experienced solicitors. THE MINING AND SCIENTIFIC PRESS PATENT AGENCY has strictly complied with the regulations of the Department, and properly filed all necessary papers as Claim Agents.

## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

Pacific Mail Steamship Co's  
THROUGH LINE TO NEW YORK,

Carrying the United States Mail.

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers for ASPINWALL for NEW YORK.

On the 10th, 15th and 30th of each month that has 30 days.

On the 10th, 15th and 30th of each month that has 31 days.

When the 10th, 15th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo, All touch at Acapulco.

Departures of 15th or 19th connect with French Transatlantic Co. steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton, and P. R. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates given below:

February 24th—MONTANA. Capt. Jos. Sulton, Connecting with the RISING STAR, Capt. Furber.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.  
An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively call at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Inman Line, can be obtained at office P. M. S. Co., San Francisco.  
For Merchandise and Freight apply to Messrs. WELLS, FARGO & CO.

The splendid steamship COLORADO will be dispatched on WEDNESDAY, April 3, 1867, for Hongkong, via Kanagawa, carrying passengers, mails and freight.  
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Prices vary from \$1.50 to \$2 per day for Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.  
Rooms belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
21v12 F. E. WEYGANT, Proprietor.

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## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner* of Feb. 16th: Nothing definite is known here as to what the Morning Star Company will do, but it is thought that the next operation will be to smelt the ore, the works to be erected at Mogul.

The Tarshish tunnel is now in 490 feet, and well timbered.

J. P. Ray has commenced work on the Mountain lode. He will sink next the east wall, where is found a soft gouge easy to work, and when sufficient depth is attained, cut across the lode and test its value.

The Alpine mill worked this week, some Mowyer ore. After being crushed, the ore was slightly roasted in a Freiburg barrel, and produced \$21 per ton, chiefly silver. Ore from the Leviathan, worked in the same way, is not yet cleaned up. Two pounds of the pulp, however, was worked by hot power process, with one pound of quick-silver, and the result was a ball of amalgam weighing thirteen ounces, avoirdupois.

## Amador County.

From the *Ledger* of February 16th: The Atchison mill will soon be ready for operating. The batteries are completed. The Kendall mill is soon again to be put in operation.

The Meader sulphuret mill at Sutter will soon be at work. It will contain ten grinders and forty-eight pans.

At Pine Grove and Volcano the mills are profitably engaged. The owners of the Anaconda are getting fifty tons of ore crushed at the Paugh mill. The Anaconda boys have the richest rock we have seen for many a day. They are putting up a whim. Crafts is having a lot of his rock worked at Thoss' mill. The Paugh mill was started up on Monday. His ore continues rich. The Union mill is being repaired, and a contract let for sinking a shaft thirty feet deeper. We understand that important changes will be made at the Coney mill. The Sutter Creek, Amador and Drytown mills are as active as ever. A Chileno picked up a piece of quartz near Union mine at Pine Grove that yielded over \$220. Frank McBride is now taking out rich rock from the new discovery, between Grass Valley and Volcano. His claim is adjoining the Crafts mine. The Tellurium will commence operations again next month.

The Kearsing Mill, with Ambler's sulphuret apparatus, is now working the rock taken from the Blue Jacket mine. This mine is on the same ledge, and adjoining the Coney & Bigelow claim. They are now down nearly ninety feet, and the rock is pronounced as good as that taken from the former mine.

The Golden Eagle mine, owned by Vaughn & Co., near Pine Grove, was sold last week for the sum of \$25,000.

The Italian mine on Else Creek, owned by Sorocco Bros., and McLaine, is being worked night and day. They are now hoisting rock from a depth of three hundred feet, and in handsome paying quantities. At the mine, they use an engine, while their mill is propelled by water power.

## Calaveras County.

From the *Chronicle* of Feb. 16th: Alexander, Seavers & Co., of the Pamona lead, in old Rich Gulch, have purchased the 10-stamp battery formerly owned by the American Shaft Company, and are engaged in removing it to their mill in process of erection. The motive power will be one of the Tyler water-wheels. The mill will be ready to commence crushing in March.

From Middle Bar district, news continues favorable. Grimm & Co. are obtaining fine prospects. The ledge is sixteen feet in width, five feet of which is remarkably rich. The entire lead will average \$25 per ton. Stewart & Co. have one of the most promising veins in the district.

A good custom mill is wanted here. No better investment could be made.

From Rich Gulch and El Dorado districts we have cheering reports. Bever & Co. and Gleason & Co., at Rich Gulch, are pushing forward work with energy. Howell & Co. have completed their bedrock flume. The mining interests of Calaveras were never in a more flourishing condition than at present, and there will be more gold dust shipped from this county the coming season, than for a number of years previous.

West Point correspondence of the same: The old Carson lode is leased for two years to McCarty & Timbony on shares. They have two shafts of fifty and seventy-five feet, and a tunnel of 350 feet. The rock will pay \$50 per ton. . . . The Goldstein mine is yielding very rich rock. . . . John Johnson's mine

is immensely rich. . . . Mr. D. Hare has struck a good mine on Bear Creek. He has some ten tons of good rock out, which he expects will pay at least \$50 per ton.

The San Andreas *Register* of Feb. 16th, says that Burnett & Paine have a placer claim near the Hawkeye, that for extent and richness, beats the world. It is believed there is rich "pay dirt" enough exposed to the eye to give employment to twenty men for as many years.

## El Dorado County.

Correspondence of the *Democrat*, of Feb. 16th, says: "The Hermitage claim at El Dorado is being thoroughly worked. On Monday last they threw out at one blast what I should consider \$5,000. The rock looked beautiful, and in some of the pieces it was hard to tell whether the gold or quartz predominated. The main shaft is down about 190 feet, but the place where the present strike is made is not more than 90 feet from the surface. The Company have a fine 40 stamp mill, at a cost of \$18,000. The Union mine, now called the Church Union Gold Mining Company, have purchased from C. P. Jackson, the old Central at Loafer's Hollow, for \$10,000 cash, and a road has been completed from the mine to the mill, about one mile. The rock is of a superior quality. Gold can be seen in almost every piece. Smith & Co. have taken a contract to run a tunnel 120 feet to strike the main ledge. They have 90 feet finished, and expect to complete the job by the 20th inst. Van Tassel & Jamison have been compelled to suspend operations on their shaft at Aurora, owing to the water. If the present weather continues, they will resume work in a few days."

From the *Courier* of Feb. 16th: The shaft on the Gillingwater claim at Poverty Point, is down over 100 feet. The ledge is 8½ feet wide, and the rock averages \$35 to the ton. . . . Shepard & Hill have a tunnel only 30 feet in, yet so rich is the rock, that they have taken out in four months money enough to build them such a mill as they need for present use. Their tunnel, thus far, has been through decomposed quartz and talc, forming itself into a solid ledge as work progresses. The rock is very rich, the sulphurets alone assaying one hundred dollars to the ton. . . . The claim of Powers & Co. also prospects richly. Prospectors can be seen, with pick, shovel and pan, leaving the city at an early hour every morning, to spend the day in search of quartz, gravel and cement beds, returning in the evening, seldom failing to bring rich specimens.

## Kern County.

From the *Havilah Courier* of February 9th: The Live Oak mine is now well opened. Several thousand tons of ore are in sight, which prospect well. The mill will be in operation in the course of the next thirty days.

## Mariposa County.

From the *Gazette* of February 16th: We have received some very fine specimens of gold-bearing quartz rock from the Romo mine, on Bar Creek, about two miles from Colorado. The size of the ledge ranges from one to six feet, averaging about three and a half feet all through.

Owing to an injunction served upon Mr. Potts, the enterprising lessee of the Princeton mine, work has been suspended for a time. In the last three and a half days previous to the suspension of the work, about twenty-three tons were crushed, which yielded \$3,600.

## Nevada County.

From the *Transcript* of February 15th: The owners of the Manzanita Cement claim are making fifty dollars per day above expenses with their 15-stamp mill. Gravel or cement which will pay one dollar and a half per ton is found to be profitably worked. . . . Fourteen tons of quartz from Rock Creek, worked at Palmer's mill, yielded forty dollars to the ton. The ledge is owned by S. B. Davenport and others of this city.

Same of 19th: The Nebraska claims, better known as the "Dutch Diggings," about two miles above Quaker Hill, are paying one hundred dollars per day this season.

From the *Gazette* of 14th: Pearl Ladd has recently sold his hydraulic claims at Rough and Ready, to a company of Portuguese from Forbestown, for \$8,000. Ladd refused eleven thousand dollars for the claim some months ago, but his flume was blown down by the cyclone of December 27th.

Same of 15th: The Wisconsin company have leased their mine to parties who have been employed in working it, for the period of three years. The lessees pay to the owners two-fifths of the gross proceeds. The mine is near the French lead, below Grass Valley, and we are informed has yielded 1,600 tons of rock, the poorest of which paid \$48 and the best \$68 per ton.

Same of 17th: In the Surprise mine, on Massachusetts Hill, a shaft has been sunk to a depth of one hundred feet, and also an air

shaft connecting with the level. At this depth they have struck a ledge varying in width from eight to fourteen inches. During the present season they have had three crushings from this mine, which have yielded respectively \$22, \$25 and \$28 to the ton. There are now some twenty tons of rock on the surface awaiting crushing.

Letter from San Juan North to the *North Californian* of Feb. 14th, has these items: The famous Eureka claim, that in other days paid so enormously at each clean-up, is hardly paying expenses. The Golden Gate has not equaled expectations, and although it is paying its stockholders a handsome dividend, yet it is not making them rich very rapidly. The celebrated American claim, at Manzanita Hill, yields at each clean up of from two to four weeks' run, from ten thousand to seventeen thousand dollars. Here, also, are several other claims that are paying well. Farther down the ridge, at Burchville and French Corral, the mines are reaping rich harvests.

Several quartz ledges have been recently discovered in the neighborhood of North San Juan, the croppings of which prospect well, but as yet no effort has been made to construct mills or to ascertain their extent and richness.

EXCELSIOR.—From the *Meadow Lake Sun* of Feb. 16th: The Golden Eagle 5-stamp mill was put in operation about ten days since. The Grant mill has been running regularly all winter, receiving its supply of rock from a partially opened mine one-half mile distant.

The Light-Foot company are now delivering rock at the Winton mill, hauling it one mile.

The Mohawk company are now getting in the final portions of their machinery from Cisco. The custom mill is now nearly completed. The Gold Run company have worked regularly during the entire winter.

Work upon the California company's shaft has been prosecuted night and day, and a depth of eighty feet has been attained. Nothing more need be added to prove the practicability of mining at Meadow Lake without cessation during the entire year.

## Placer County.

From the *Stars & Stripes* of Feb. 13th: A couple of boys were chasing a lot of stock up the ravine, a few days ago, and were pelted them with pebbles and stones which they would pick up on the side of the ravine, when the attention of one of the boys was attracted by the unusual weight of one of the stones thus picked up, which, on examination, proved to be a nugget of gold, weighing about 10¼ ounces, and worth about one hundred and twenty-eight dollars.

## Plumas County.

From the *National* of Feb. 9th: We are informed that placer mines of great value have been discovered near the site of the old Buckeye mill, between Round Valley and Greenville—prospecting as high as one dollar to the pan. Considerable excitement has been occasioned in the vicinity by the discovery, and numerous locations have been made.

From the *Quincy Union* of same date: Underwood & Co., who have been prospecting at Dutch Hill for some time past, have struck the lead and found very rich diggings. The old Cummings claims are still paying enormously.

On Monday last new diggings were struck in the hill on the west side of North Cañon, between Greenville and Round Valley. Some of the dirt prospects as high as \$1 to the pan. The whole hillside for a mile, has been staked off and claims located.

John Parrott & Co., of San Francisco, are now the owners of the Eureka mine and ledge in this county. Last year they worked the mine, employing only about eighteen men, and made a profit of \$10,000 for the season's work.

## Shasta County.

From the *Courier* of Feb. 16th: Last week, Col. Waish shipped seven tons of Chicago ore to San Francisco, for the purpose of having it worked. Heavier shipments will be made as soon as the roads from South Fork and Red Bluff become passable.

The last run made by the Washington mill, at French Gulch, yielded \$2,255.

Peck and Tiffin, whom we spoke of as having gone on a prospecting expedition to the head of Mad Ox Creek, have returned and reported finding some rich gold quartz, but think the ledges are too small to pay for working.

## Sierra County.

From the *Downieville Messenger* of Feb. 16th: The New York claims, at Sawpit are reported as paying big dividends.

The Union, at Gibsonville, has been paying, it is reported, about an ounce a day to the hand for some time past.

The North American and Nevada claims

at Newark are said to be steadily paying about six or eight dollars per day to the hand.

Letter to same from Downieville: The American Company is working twenty-five men, all day hands. Their ground looks well. The claim is in the best of condition. The claims of Parish & Co., McGee & Co., will be started on the first rush of water, and with all the men we can work this coming spring, this will be a lively camp.

## Siskiyou County.

From the *Yreka Union* of Feb. 9th: Mr. Henry Truett, of the Shasta Butte Quartz Co., a few days ago discovered another quartz vein on the middle fork of Humburg creek. The vein is about two and one half inches in width on the surface. Our informant says it is the richest quartz yet found on the creek.

The Mary and Eliza Quartz Co., on Humburg, are running a tunnel into the hill, and expect to strike the vein near the water level. They have taken out about fifteen tons of quartz on the surface, which we are told is fine looking rock.

Rich rock is now coming out of the Mexican mine. It is peculiar, and several tons of it had been thrown aside, before it was discovered to be good. Three pans of it yielded two dollars.

## Trinity County.

From the *Journal* of Feb. 9th: Within the past few months we have received information from several reliable parties that good paying placer diggings had been found in the extensive scope of country lying between Hay Fork Valley and the South Fork of Trinity river, as well as on that stream and its tributaries. We give an extract from a Humboldt county letter: "Placer diggings are known to exist on several streams that empty into the Trinity along that space where the river is the boundary between your county and ours. These streams are Willow Creek, Indian Creek, Grouse Creek and Madison Creek. Ours is not a mining population, and consequently but little has been done towards prospecting those sections. An old practical miner (now a soldier) who has been stationed at Fort Gaston and Inqua, assures me that good \$10 diggings have been found, and that miners are actually making that amount. He further tells me that miners have purchased goods at Arcata, for which they made payment in gold dust, and that they had an abundance of it."

## Tulare County.

From the *Times* of Feb. 9th: We have seen some quartz from Antelope Valley that looks well, and is said to be rich. This discovery is in the hands of enterprising men, and we understand they intend to open and fully develop it. This valley is but eighteen miles from Visalia.

## Tuolumne County.

From the *Columbia Citizen* of Feb. 16th: In Corral Gulch, W. A. Hanson is running a cut, one thousand feet long, for the purpose of working a claim that paid on the surface, three years ago, \$400 per week.

## Yuba County.

From the *Appeal* of Feb. 19th: Brown's Valley is to become a second Grass Valley. We understand that the Donnebrogue, Yuba and Sweet Vengeance will resume operations on the 1st proximo; also, that work will commence on the Dan Webster.

From the *Grass Valley National* of Feb. 15th: At Timbuctoo, the great blue gravel lead is panning out as lively as ever. The Union claim finished their new flume a few weeks ago at a cost of \$11,000. It is three feet wide and two feet perpendicular, the boxes being twelve feet long, and of course lined, as usual, with blocks. The Union Company took out of the last eight boxes alone, a short time ago, \$500 in gold, and from the "under-current," fifteen ounces. The Antoinette Company cleaned up, the other day, from nine days run, \$8,000.

## ARIZONA.

From the *Miner* of Jan. 26th: Under the superintendence of Charles L. Strong, a very fine quartz mill has been erected at Hardyville for the reduction of the quartz from the Moss lode, which promises rich results.

The persistent prospecting upon the several mines at the head of Silver Creek, by W. H. Hardy, is producing great confidence in the value of the mines now being opened. From the Sacramento district, adjoining, we hear flattering accounts, notwithstanding the late Indian murder of several miners.

## COLORADO.

From the *Times* of January 29th: From a cord of quartz, taken at a depth of twenty-five feet from the Chemung lode, Lake Gulch district, Messrs. Ewers & Stocks realized nineteen ounces and three pennyweights of gold, which, at \$16 (coin) per ounce, is worth \$305.40.

Indications at present denote a lively



mining season in Gilpin and Clear Creek counties in the spring.

An assay was lately made at Denver from silver ore brought from the Ground Sluice lode, Red Mountain district, and the result was a nine dollar button, which was equal to \$2,600 to the ton. This ore was from a depth of only twelve feet.

The Smith & Parmelee, Black Hawk and Selsenderfer companies retorted, respectively, 175, 91 and 185 ounces, last week, some of them from only a four and five days' run.

In Ward district the Ni Wott company are replacing their burned down mill with a new 50-stamper, which will very soon be prepared to "pond away." Bigby's six-stamper is busy, and Cushman's crusher soon will be. A Crosby & Thompson 21-stamp mill is crushing from the Stoughton lode, and the Pomeroy company's 20-stamper is preparing to pond.

The "Beldou & Tennial Mining Company of Colorado" was recently organized in New York. They own several well known lodes in Russell and other districts.

There is one shaft on the "R. P. Ranney" lode 100 feet deep, and another 30 feet deep, both well timbered. On the Black Quartz lode there are several shafts down to the crevice, and one to the depth of about fifty feet. This last exposed at the bottom a large crevice of rich quartz.

From the Denver News of January 30th: In Sugar Loaf district, but little has been done except by the Colorado Mining and Exploring company. On the North Star a shaft has been sunk eighty feet. The crevice is from two to five feet wide, with a pay streak of from eighteen to twenty inches thick. About eight cords of ore are now on the surface, which, it is estimated, will produce three thousand dollars. Two other lodes, within forty rods of the North Star, have been tested to some extent. The Saturn has a shaft twenty-five feet deep on the Discovery, with a pay streak three feet wide. On the Topeka a tunnel has been driven forty feet, showing a fine crevice four feet wide. On the Black Jack the discovery hole was sunk forty feet, when a drift of eighteen feet was made on the hole.

In Bald Mountain district, Wilson Edson and Fowler are the only ones that appear to be doing anything. They will erect machinery in the spring. About twelve cords of top ore have been taken out of the various lodes, estimated, from sampling in the pan, to be capable of producing from \$5,000 to \$6,000 in gold.

From the Register: Mr. Harris, from Georgetown, yesterday gave us the result of an assay of ore from the Bethany lode, which was \$22,137.30, in silver, to the ton. The ore was not more than three feet from the surface. Several buttons of silver were also exhibited from the Vermont and Nuckolls lodes. The Nuckolls lode is being worked by the Washington company, two tons of ore being taken out every day.

#### IDAHO.

From the Owyhee Avalanche of Feb. 9th: The Cosmos Company is making the necessary preparations to start up the mill. Another week's labor about the mine and mill will put everything in order. We have outside information from New York that the financial affairs of the company will soon be adjusted.

The Dashaway ledge presents fair prospects. A shaft to the depth of fifty-five feet has been sunk this winter. At the bottom, the ledge is twenty inches wide with solid casings.

The first extension north of the Poorman, which was sold in New York, will be opened in April.

The Woodstock ledge is reported as making a most satisfactory showing at the bottom of the shaft—two and a half feet wide and richer than ever.

The Vulcan ledge is being worked. Informed that it looks as well as ever, and that much good quartz is piling up at the works.

The New York and Owyhee Company will at once commence work in their lower tunnel, on the Hays & Ray ledge. There remains 400 feet to be run to reach the original shaft on the Poorman.

A sample of ore from the Sherman ledge in Flint district, assayed last week, \$4,944 per ton.

From the Lewiston Journal of Jan. 24th: Mr. Gilbert, who came in from the Gnat Creek mines on Monday, reports about eighteen men at work there, making from three to five dollars per day per man. There is about eighteen inches of snow in the mines. They have some timber to remove in mining. The stripping is about two feet deep, and the pay gravel averages about eighteen inches. The gold is fine and is worth about \$18 per ounce.

Two miners came in town on Tuesday from the bars of Salmon river, about ten miles above its mouth. They report about

twenty-five men at work in that vicinity, mining. The average per day per man is about three dollars, including the time occupied in clearing away and stripping. In some places they are working high bars, with about eight feet of stripping and from six to eight inches of pay gravel underneath. The pay dirt is a kind of gravelly clay or cement which requires puddling to extract the gold.

#### MONTANA.

From the Post of Jan. 26th: The Postlewait mill commenced operations a week ago. It is one of Hendy's improved, and has fifteen stamps. The machinery runs as smoothly as clock-work. The first run was six days and a few hours, and the clean-up \$1,103. It is estimated that not over two-thirds of the gold was saved, owing to a defect in the housing around the batteries, which let some six pounds of quicksilver escape, but this will be remedied at once, and a portion of it will yet be recovered in the blankets. They have some 500 or 600 tons of rock taken out, and they will be kept constantly at work.

Wright & Co., who have been sinking a shaft in the gulch opposite Oregon City, have struck bedrock at a depth of sixty feet, and are taking out big pay. Some three other companies are running drain ditches preparatory to sinking to the bedrock; and all the indications favor a lively time next summer. Ground in the gulch is held high, and bar claims are being worked with fair returns.

Quite a number of claims are recorded in Rabbit district. By August next, the hills around will echo the sound of many stamps. Rochester Gulch is highly spoken of by old miners.

In New York Gulch, Mr. Hendrie's 24-stamp mill, last Monday started up on quartz from the Esta lode, with every prospect of success. Simpson & Co.'s 30-stamp steam mill will shortly commence operations. Considerable sales have of late been made in that section. One in Philadelphia comprising one-half of six ledges, (6,000 feet) for \$90,000, or at the rate of \$90 per foot. Major Cullen & Co. are preparing their mill-site for machinery, which they have already ordered. An agent for a Chicago company is also looking around, and is evidently anxious to invest. Work on the various lodes is progressing finely, and everything looks fair for an active campaign during the next year.

The main shaft of Prof. Hodge's mill is broken. The delay will cause serious loss.

Eight thousand two hundred dollars was the amount cleaned up last week, in the Turnley mill, from Whitlatch Union ore.

In the Sterling lode, Mr. Cope recently ran a side cut fifteen or twenty feet from the main tunnel, and "struck it heavy." The vein is now perfect; the crevice having a well-defined wall-rock and fully five feet of splendid quartz. The town is growing up rapidly.

Letter to same from Summit, dated July 18th, says: The Lucas mill, a 24-stamper, is pounding away with twelve stamps. A new engine is to be put in, capable of running the whole number. The last run of six days proved very satisfactory, so much so that the company this week purchased the claim of 100 feet from which they are crushing, for the sum of \$30,000. The shaft is eighty-five feet deep. . . . Nearly opposite the Lucas, on the west side of the gulch, Messrs. Mesler & Co. are running a tunnel. It is now 190 feet long. They propose striking the Butler lode, 180 feet below the surface. The rock is very hard and every foot must be blasted. Lower down the gulch another company are also driving a tunnel to strike the Kearsarge, 190 feet below the surface. . . . The New York Company, which purchased the Seneca Falls mill, intend putting up a new 30-stamp mill, in the spring. . . . Ezekiel & Johns are running a tunnel on the Mechanic lode that prospects well. On account of the snow they will not crush from it before spring.

Letter to same from Bannack: There are now five companies operating here and two at Argenta. The Dacotah No. 6 is an entire success, but the Butterfield does not contain the requisite machinery for saving over one-fourth of the precious metal. Every available place in the vicinity of the mill is now filled up with tailings, which will at no distant day yield a fortune. Dr. Hopkins has gone East to purchase the necessary machinery, which will be forwarded early next season. . . . In the Huron, the mineral is rich, and the crevice now two feet wide. Smelting will be commenced in the spring. . . . The mill of the New Jersey Company is now running like a top.

From Red Mountain: Very rich and extensive placer mines have just been discovered high up on the mountains, immediately below the belt of rich quartz ledges that crop

out distinctly for a distance of over three miles.

Among the richest quartz leads in this section may be mentioned the Ballarat, Golconda, Nevins and Red Mountain. On the former, two tunnels are being run to strike them at a depth varying from 100 to 250 feet. On the latter, two shafts are being put down. The ledges vary from five to sixteen feet in width, and are of great richness. From four pounds of rock taken from the Nevins, \$4.20 was obtained by crushing and panning out, without the aid of quicksilver. Rock taken from the Golconda and Ballarat will average ten cents per pound.

#### NEVADA.

##### Black Rock.

From the Nevada Gazette of Feb. 14th: Capt. Frank Coffey has lately returned from Black Rock. He has great confidence in the richness and permanency of the silver mines of that country, and intends to return in a short time. The Evans mill will be again started up in the spring. The ore is of a spongy character, reddish color, and unlike any other silver ore of the coast. Some assayers have pronounced it fabulously rich, while others have been unable to find any traces of silver in it. Some of the ore has been reduced at a mill in Washoe and yielded good returns.

##### Esmeralda.

From the Union of Feb. 9th: The Juniata mine is now paying and promises to become one of the most permanent and lucrative mines in this section. The fault heretofore has not been so much the lack of mineral in the ore as the want of proper management in the amalgamating department. The last run of ten days, in which about 170 tons were worked, paid some \$22 per ton, which will leave a net profit of from \$7 to \$9 per ton. The rock worked was not all of the best quality.

##### Humboldt.

From the Register of Feb. 9th: On the Golconda ledge, they are down seventy-five feet. The ledge is increasing in width, and the ore improving. . . . The Sheba mill is running on Yo Semite ore.

Oreana continues to wear an active and thriving appearance—furnaces going day and night rolling out the silver. A large building is being erected to inclose the company's works.

In Santa Clara district, McBeth & Melander are working the Little Giant. Everything looks favorable. The ledge has increased about fourteen inches in width within the last week in the tunnel. They are now taking out good ore.

The Elmira Company is progressing rapidly with its tunnel and main shaft on the North Star mine. Five tons of fine ore has just arrived from this mine at the Pioneer mill, for reduction.

The Washington Company are in 100 feet and expect to continue 800 feet further before they cut the main vein.

The Commonwealth Company will reach the Barker ledge in about sixty feet from where they are now at work.

##### Pahranaagat.

The Virginia City Trespass of Feb. 16th, says: Judge Lawrence, late Special Postal Agent, just from Pahranaagat, gives us these items: Rock from the Sebastopol ledge assayed 10,084 grains silver to the ounce, or at the rate of \$796.38 to the ton. Another ledge, the Waukenah, assays 4.54 grains silver to the ounce, or \$358.54 to the ton.

##### Reese River.

From the Reveille of Feb. 9th: Seventeen tons of ore from the Taylor & Passmore location in the Nevada Giant, Cortez district, arrived this afternoon. Several lots also from Hot Creek and Reveille.

Ten tons of chloride ore from the Vineyard mine, near Yankee Blade, yielded \$98 per ton. . . . Gen. Wild, of the Diana, has leased the Silver Hill mill.

The Gilligan mine, Egan Cañon, has been opened by an incline to the depth of 450 feet. The ore yielded \$200 per ton. The vein is four feet thick.

In Mammoth district, the sinking of the main shaft of the Mount Vernon Company is temporarily stopped by the great volume of water. . . . The shaft on the American Flag is down 130 feet. The ledge is twelve feet in width. . . . The Uncle Sam ledge is two feet thick.

From same of 11th: A shaft, fifteen feet by five, is to be sunk to the depth of 1,000 feet, by the New York and Austin Company, on Lander Hill. Major Sherman, the superintendent, estimates that it will take three years. There seems to be a growing disposition to resume work in earnest on the mines in the neighborhood of Austin. . . . The Confidence mill, of ten stamps, located at Yankee Blade, has been purchased by the La Plata Silver Mining Company, and will be immediately removed to Park Cañon in the North Twin River district. This com-

pany has a vein forty feet in width. Fifty tons of the ore worked \$90 per ton.

Same of 13th: Five bars of bullion, worth \$4,500 came in from Buel's mill last night. It is from Highbridge ore. . . . Fourteen bars, worth \$13,114, came in from the Murphy mine, of the Twin River Company.

Same of 15th: From present appearances the heaviest shipment of bullion ever made from this district will be that for the present month. The Timoke, the Florida, the Great Eastern, the North Star, the Magnolia and the California, have been yielding ore of fine grade. That from the North Star works \$300 per ton.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Territorial Enterprise of Feb. 12th: Another outburst of water has occurred in the Cole tunnel. The track was again torn up for some distance. At last accounts, the amount of water had decreased to twenty inches.

Silver-bearing quartz has been struck within eighteen miles of Mill Creek, on the west side of the mountains lying east of Surprise Valley. Ore from one of the leads yielded by mill process \$57.25 per ton. These mines are on the direct road to High Rock, Black Rock and Star City.

Same of 13th: In the Mont Blanc mine, the tunnel is in 575 feet, and in the course of another 100 feet, will cut the ledge at a depth of 250 feet.

Same of 16th: The new shaft of the Hale & Norcross Company is now 100 feet deep. . . . The dump of the Chollar-Potosi is full to overflowing. . . . The Savage engine is of 300-horse power, is beautifully finished, and is well worth visiting.

Same of 17th: A new pump-bob is being put in place at the main shaft of the Ophir and Mexican mine, in order to lower the pump and sink the main shaft to a greater depth. A drift is now being run at the depth of 630 feet for the purpose of opening a new level. This new drift will tap the lead at a much greater depth than has ever before been reached on the vein in either the Ophir or Mexican.

From the Trespass of Feb. 11th: Work on the new shaft of the Imperial Company was stopped on Saturday for repairs. The shaft has reached a depth of about 800 feet. The rock does not require blasting, and there is very little water to contend with.

Yellow Jacket Company is sinking for a new level in their south mine, and have already attained the depth of thirty feet.

The Petaluma mill, recently improved, has been leased by Messrs. Walker, of the Bullion, and Tritle of the Belcher, and is now at work upon the reduction of ore from the Kentucky mine.

Same of 15th: In the Plato mine, Gold Hill, a drift is being run from the bottom of the new incline, which is 150 feet in depth, to cut the ledge. The engine, formerly the property of the Miantonomah Company, has been set up, and is doing excellent work.

On Cedar Hill, so crowded with mines in 1861, the Sierra Nevada alone is being worked to-day.

From the Gold Hill News of Feb. 11th: The Savage mining works, which have been shut down for a few days, started up again on Saturday evening. We do not know how the lawsuit has been disposed of, but it is the desire of every one interested in the welfare of the country that the matter will be settled so that the mine may continue work.

In the Bullion mine, a drift for air is being run. The work of prospecting the new discovery will be resumed as soon as the drift is completed.

Same of 13th: All the mills in Gold and Six-Mile Cañons, on the Carson river, and in Washoe, have started up again.

ECONOMICAL PUMPING.—It is estimated, says the Nevada Transcript, that about three-fourths of the water to be pumped from the Cunningham mine comes from the surface and finds its way to the bottom. The superintendent, John Pattison, runs two pumps. An 8-inch Cornish pump is placed one hundred feet below the surface, and kept running on a half stroke. A 5-inch pump of the same kind is kept at the bottom of the mine. The well at the upper pump catches all the surface water, which has only to be raised one hundred feet, whereas if only one pump were used it would have to be lifted double the distance. The Cunningham has now as much water as it ever will have, but the pumps are only worked to about one-fifth their capacity.

From 1856 to 1865, ten years, two thousand and nineteen deaths occurred from explosions of fire damp.



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

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## Canvassing Agents.

Mr. Thomas Starr is Agent for the Mining and Scientific Press in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1886.  
Mr. L. W. Felton, is an authorized agent for this paper at Portland Oregon. Dec. 1, 1886.  
Mr. S. D. Whitaker, is our authorized Traveling Agent and Solicitor from this date. Jan. 1, 1887.

## San Francisco:

Saturday Morning, Feb. 23, 1867.

## Notices to Correspondents.

DEMYUS.—The rationale of the production of Tremolite, which was adverted to in our notices of "Contributions to our Cabinet," in last week's publication, can be explained in detail as follows: Actinolite, which is a variety of hornblende, has a composition, on the average, as follows:

Lime.....	14.60 per cent.
Magnesia.....	21.00 per cent.
Iron.....	5.00 per cent.
Silica (and quartz).....	65.00 per cent.
	100.00

## Tremolite consists of—

Lime.....	14.00 per cent.
Magnesia.....	23.00 per cent.
Silica.....	61.00 per cent.
	100.00

The small quantity of fluorine, said to be always present, is dismissed from the calculation. There are aluminous tremolites, which have probably been formed from common aluminous hornblende, as may be observed by the following account of the analysis of each:

## Analysis of Common Hornblende:

	I.	II.
Lime.....	14.00	10.00
Magnesia.....	19.00	13.00
Oxide of iron.....	8.00	20.00
Silica.....	46.00	50.00
Alumina.....	13.00	7.00
	100.00	100.00

## Analysis of Aluminous Tremolite:

Lime.....	13.00
Magnesia.....	22.00
Silica.....	48.00
Alumina.....	14.00
Oxide of iron.....	3.00
	100.00

Moreover, the specific gravity of Tremolite is only 2.93, whilst that of Actinolite is 3.03; the lower specific gravity of the former may not unfairly be assigned to the non-presence of the iron, which forms one of the component parts of the latter; an absence which we think may be fairly attributed to the cause which we have alluded to in our former notice. In the first quoted analysis of Tremolite, probably metamorphosed from Actinolite, it would appear that a portion of magnesia was dissolved and carried away in company with the oxide of iron, by acidulated water. In the second series of analysis, viz: those minerals associated with alumina, it would appear that it was the oxide of iron that was dissolved out. Carbonated acidulous waters, such as Seltzer, are well known, whilst sulphuric acid is found, in some cases, in large quantity, the most notable instances being those of the Rio Tinto, in Europe, and the very extraordinary one of the Rio Vinaigre (so called from its sour taste), in South America.

J. S.—The value of a cement of whatever kind resides in its power of adhesion. It sometimes happens that this force surpasses the cohesion of the bodies cemented. It is from this cause that trial pieces of wood, such as a ship's mast, cemented with what is termed marine glue, when torn asunder, is usually found rent not at the planes of cementation, but along a ragged outline in the solid wood. It is in this way that the curious feat of splitting a bank-note into two laminae is accomplished—that is, by firmly cementing the note between two flat surfaces, and subsequently gradually withdrawing the pieces cemented. The cohesion of the paper being feebler than the adhesion to the cement, the paper becomes split through its center. This method of splitting paper has been long known to hull cutters and inlayers.

W. Y.—Capillary attraction is owing to the balance of the forces of adhesion and cohesion between solids and liquids under the simultaneous influence of gravity. Adhesion is the power exerted which holds together particles of matter dissimilar in character; cohesion is the power which holds together particles of matter possessing a similar composition.

## Argentiferous Lead Smelting in Humboldt County, Nevada.

## NUMBER ONE.

Numerous efforts have been made, at different times and places, to put in operation, on this coast, smelting works for the reduction of argentiferous lead ores, and silver ores proper, which cannot be successfully treated in the wet way; but we believe that in every case hitherto reported, either partial success only, or utter failure has been the result. Works for treating the simpler ores of copper (carbonates) have, however, met with better success, and considerable amount of that metal, so obtained, has found its way to this city. Extensive works for treating the poorer sulphuret copper ores, were put up, some two years ago, at Cop-peropolis, which were also a success, so far as securing the metal was concerned; but which failed in a pecuniary point of view, in consequence of the great cost of labor and fuel.

A large amount of money, however, has been sunk in unsuccessful enterprises of this kind, which owe their want of success either to inexperience, or to attempts to improve, by new "processes," on those which have been gradually built up on the results of many years of experience and study on the part of the ablest metallurgists of Europe. The folly of such a course ought to have been apparent to any person of ordinary business capacity. It is to be hoped that the experience of the past will teach Californians to let well enough alone, and lead them hereafter to put their confidence in experienced persons only, avoiding all "new process" men, as mere ignorant pretenders. Not that improvements are entirely out of the question; but that they should be introduced only under the direction of capable, cautious and practical men; such as have first made themselves well acquainted with all the old processes.

But with all this unpleasant and costly experience, it gives us pleasure to refer to at least one company which, believing that what has been so successfully carried on in the Old World, for centuries, could be made a like success here, has tried the experiment with the most satisfactory results; and furnished the most indubitable evidence that a large remunerative profit can be derived from the reduction of our rich lead and silver ores by smelting at the mine, even in the distant Humboldt River Valley. We allude to the

## TRINITY AND SACRAMENTO SILVER MINING COMPANY,

Of the city of New York, operating under the management of Mr. A. W. Nason, as Superintendent. During the past year, this company has become the owner of the well known Montezuma mine, near the town of Oreana, on the Humboldt river, State of Nevada, at a cost of \$100,000. They have erected smelting works of a capacity for reducing from fifteen to twenty tons of ore per day, which have been in constant operation for nearly four months. The smelting, we are assured, has been a perfect success from the start; although the refining was attended with some considerable trouble at first, by reason of the presence of a large quantity of antimony and iron in the crude metal obtained from the ore, and the difficulty of obtaining suitable refractory material for the construction of their furnaces. Experience and patience, however, with the avoidance of untried experiments, soon overcame the obstacles, and the company is now making regular shipments of silver bullion of the highest grade, and at a fine profit. A shipment of some fifty tons of lead, will also soon be made to parties in this city, with whom lead is a leading consideration. In view of this successful result, there is good reason to expect that the mines of the Pacific Coast will soon be able to supply, not only the home demand for this useful metal, but also form a material item in our metallic exports.

## THE WORKS OF THE COMPANY

Consist of a mill department, for the reduction of such ores as will yield readily to the mill process—a considerable quantity of which is found; a smelting department for the more refractory ores; a calcining department, for removing the antimony and iron, or other base metals, from the crude products of the smelting furnace, and a refining department, in which the lead is separated from the silver, which latter product is shipped to this city as bullion. At present but a small portion, only, of the lead, will be shipped from the mine; the balance being kept in store as litharge or in hars, for shipment when the cost of transportation shall be reduced by the nearer approach to that region of the Central Pacific Railroad, the surveyed line of which passes within less than two miles of the company's works. When the works are fully completed, which will be in a few weeks, they will have cost the company fully sixty thousand dollars, and will be able to turn out from \$1,500 to \$2,000 per day in silver alone. It is confidently expected that the railroad will reach the locality of this mine before the close of next year. It will be completed to Crystal Peak, at the eastern part of the Sierra Nevada, 125 miles from the company's mine, during the present year. The company is now hauling the rails over the Summit on runners, so that the same may be laid from the eastern end of the Summit tunnel to Crystal Peak by the time the tunnel itself is completed, and the track laid up to its western terminus.

## THE MONTEZUMA MINE,

From which the company obtain their ore, is a lode consisting of an earthy carbonate of lead, intermixed but sparsely with acicular crystals, yielding, in metals, about as follows:

Antimony.....	30 per cent.
Iron.....	4 "
Lead and silver.....	65 "
	100

The yield of silver per ton of ore, varies from \$80 to \$200. There is very little gangue, and no perceptible amount of silica is present. No sulphurets in quantity have yet been found. The lode varies from ten to fifteen feet in thickness, and is very uniform from wall to wall. The deepest shaft is but sixty feet. The most of the ore hitherto raised, has been taken out within five feet of the surface. The character of the lode will undoubtedly change to a sulphide as soon as the company shall have penetrated to a short distance below the present water level. Four or five men, for the present, are able to take out mineral enough to keep the works in constant operation.

A want of skilled labor was felt for a time, and still continues to some extent. Experienced hands, in this branch of mining and metallurgy, will do well to put themselves in communication with this company, as employment there, when obtained, will in all probability be steady, and the company are paying liberal prices.

As already intimated, three processes are employed in the furnace operations of the company, before the lead and silver are finally obtained as separate products. As much interest is now being felt in the working of lead ores, which are found in large quantities at various points on this coast, we have thought it would be a matter of especial interest to our readers to see a full description of the appliances and processes employed by this company in working their ores. We will endeavor to describe these as fully as we can without the help of illustrations. Any person who has either Muspratt's Chemistry, Ure's Dictionary of Arts and Sciences, or Lamborn's Treatise on Silver and Lead, will find illustrated in those works very nearly the same furnaces which we propose to describe. Some slight modifications have been introduced by Mr. Nason, but not sufficient to show any essential difference of construction. The ore, as it comes from the mine, is first subjected to an ordinary smelting operation, which, together with the subsequent processes employed at their works in obtaining the silver, lead, and antimony, as separate metals, will be fully described next week.

[To be Continued.]

## Auriferous Sulphurets not Always Found in Connection with Quartz.

The fact is now pretty well established that auriferous sulphurets are not always associated with quartz, or in fact with any vein matter whatever. We have several times alluded to the fact that gold has been found in sulphurets taken from the country rock, especially slate, at long distances from any indication of a vein or lode of any kind whatever. The writer in Dicker's *Mining Record*, of October 2d, 1866, elsewhere quoted, speaking of his examinations in Australia, says:

I have for many years inclined to the belief that the mundic [auriferous sulphurets] was the original matrix of the gold; for while I have found quartz in plenty without gold, I have never found mundic, whether in the lode or in the country [the enclosing rock], which has not held more or less gold. \* \* \* In a mine I had charge of, I took mundic from a vein of pure mundic, about half an inch thick, running through the country, at least 100 feet from any quartz lode, from which I obtained nearly one ounce of gold from the hundred weight of sulphurets [by roasting and smelting].

Mr. Thompson, of the Port Philip Mining Company, at Clunes, Australia, has had the same experience in experimenting with the mundic in the vicinity of that mine.

Dr. R. P. Stevens read a very interesting paper before the New York Lyceum of Natural History, on the 18th of December last, in which he alludes to the occurrence of gold in the sulphurets found associated with the slates of North Carolina, for many miles in extent. The gold is there found not only in the sulphurets, but also, in small quantities, disseminated throughout the mass of the talcose slates. Such is also the evidence of Professor Tuomey and Professor E. Emmons, recently deceased. Prof. E. saw strata of slates, many hundred feet in width, from the decomposed surfaces of which gold could be obtained by panning. Careful examinations of the rock itself proved conclusively that this gold was derived from the decomposed rock, and not from auriferous gravel deposited upon them by the action of water.

A similar mass of talcose slate is now being worked for gold in the lower portion of this State—in Amador county, if we are not mistaken. The rock is taken out as from a quarry, without any indication whatever of a vein or lode of any kind. Possibly there may be other similar localities in the State.

These facts, as well as others elsewhere given in the present issue, in relation to the treatment of sulphurets, serve to show that we have much yet to learn with regard to the occurrence of gold and the manner of treating its ores. There is a large and inviting field open in this direction, both for the scientific and practical miner. Both are needed for its development, and they should work together for the general advancement of the great and important interest of gold mining.

GOLDEN CITY CHEMICAL WORKS.—This is the name of a new corporation, dating from February 19th. The object is for "the manufacturing of acids and chemicals of every description." The amount of capital stock is \$500,000, divided into 5,000 shares of \$100 each. The incorporators are H. P. Wakelee, Thos. H. Selby, Alpheus Bull, John Parrott, Nicholas Lunig, Wm. E. Barron, Thos. Bell, A. Hayward, Chas. E. McLane, and P. L. Weaver.

PERSONAL.—Mr. Wm. R. Bradshaw, formerly attached to this office, but recently a teacher in the Oakland public school department, has been elected to an honorable position in the Monmouth College, Oregon. He leaves to-day on the steamer Oriflamme, for Portland. As a young man of sterling qualities, we wish him success.

TABLE ROCK.—The remaining portion of this noted natural curiosity, so well known to all visitors at Niagara, fell on the 14th.



### Interesting Experiments with Auriferous Sulphurets.

We subjoin the following interesting detail of a series of experiments made with auriferous sulphurets, in Australia, by a gentleman who communicates the facts to Dicker's *Mining Record*, of October 23d, 1866, over the signature of "Mining Engineer." We give the detail substantially in the words of the correspondent of the *Record*. The 10 cwt. of "Mundic," (auriferous sulphurets), which was made the subject of these experiments, was concentrated from about 40 tons of quartz.

He took the 10 cwt. of mundic, and first amalgamated it in a Freiberg barrel, to get out as much as possible of the fine gold which had escaped from the battery; he got out about 5 dwts. He then divided the mass into four charges, and roasted each charge 24 hours in a reverberatory furnace, the sole of which was about 12 feet by 6 in superficial dimension. The roasting was kept up at a dull heat, the sulphurets being constantly stirred. He then ground the roasted mass in a Chile mill, until the 10 cwt. was reduced to 2½ cwt. This 2½ cwt. was then put in the barrel, with 170 pounds of quicksilver, half a pint of muriatic acid, 15 pounds of salt, 75 pounds of scrap iron and 14 buckets of boiling water; the barrel was allowed to rotate for 24 hours. He then carefully collected the quicksilver—losing 1 pound out of the 170 placed in the barrel. The entire mass of quicksilver was carefully retorted, and only nine pennyweights of gold obtained.

He next took the 2½ cwt. of roasted ore which had been worked in the barrel, and re-roasted it 24 hours; re-ground as before, and concentrated the mass to about four tin dishes; this he panned down to 27 ounces, dry. He put the 27 ounces into a bucket with 84 pounds of quicksilver, and kept a boy stirring it with hot water and salt for five hours, when he drew off and retorted all the quicksilver, obtaining only a trace of gold. The 27 ounces of residuum was then dried and smelted. Nine ounces and twelve dwts. of gold was obtained from this process! Two other lots of sulphurets, of five and three hundred weight each, were submitted to the same treatment, with similar results in both cases.

The inference very naturally drawn from the above experiments, is that the gold in sulphurets cannot be obtained by amalgamation, or only partially so. It will be interesting, in this connection, to refer to the experiments which we published in our issue of January 5th, where amalgamation in pans was tried against the chlorine process. In that case, several lots of sulphurets were worked from the same heap, of uniform richness, which assayed \$460 to the ton. The first lot was worked raw, by pan process; the second lot was treated in the same pan, after roasting, and the third lot was first roasted and then subjected to the chlorination process. The following are the results: worked by pan process raw, \$336; by pan process after roasting, \$240; by chlorination process, \$414.

The difference in the yield between the amalgamating process and that of smelting, in the Australian experiments, is out of all proportion, as compared with the difference between amalgamation and chlorination at Grass Valley. Allowing the experiments in Australia to have been correctly reported, of which there can be little doubt, we must suppose that the gold in the Australian sulphurets was differently conditioned from that usually found in sulphurets in this country.

It should be noted, however, that the sulphurets appear to have been roasted, in the Australian experiments, at "a dull red heat" only; while to arrive at a proper desulphurization the final roasting should have been kept for some time at a bright red heat. Had they been subjected to such a heat, there is no doubt but that a large proportion of the nine ounces obtained by smelting, would have been recovered in the previous barrel operation.

Still, that differences do exist there can be no doubt. Gold in sulphurets is sometimes visible to the naked eye, in others invisible to the most careful microscopic examination; although the crucible, in the latter case,

shows that it is present. Hence it is but fair to conclude that different degrees of success may attend amalgamation when applied to sulphurets from different localities.

The above facts and suggestions commend themselves to the serious consideration of all persons interested in mining for gold.

### Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

137.—MR. T. STAR sends us a specimen from the U. S. Grant mine of Meadow Lake. The lode at this mine averages about four feet in thickness. Near the center is a streak of decomposed sulphurets, about four inches in thickness, very rich in gold, which is seen all through the same, without the aid of a glass. The quartz which accompanies the sulphurets is highly vitreous in character, presenting the appearance of having been subjected to great and long continued heat.

138.—CAPT. WILLIAMS, Superintendent, has contributed to our cabinet a specimen of ore from the Sance mine, Lower California, together with a sample of the native metal (copper), as taken from the battery of the stamp mill, also the sulphurets (vitreous) as collected by concentration. An extended notice of this mine will be found in another column of our present issue.

139.—CAPT. WILLIAMS also presents us a specimen from the Giantess mine, located near by the Sance, and belonging to the same company. The Giantess lode carries a notable quantity of silver as well as copper.

NEVADA LEGISLATURE AND THE SUTRO TUNNEL.—We have received a copy of a neat quarto pamphlet, containing the "Joint Memorial and Resolutions of the Nevada Legislature, asking Government aid in the construction of the Sutro Tunnel, together with the Report of the Senate Committee on Federal Relations," showing the importance of the work. Also proceedings of the Nevada Legislature in regard to the matter. We quote the concurrent resolutions complimentary to Mr. Sutro, which were passed by that body:

*Resolved*, by the Senate, the Assembly concurring, That the Legislature of Nevada recognize, as already due, and cordially extend the thanks of the people of this State to Adolph Sutro, for his great service in originating the Sutro Tunnel, and urging aid and organization for undertaking work upon the same; and be it further concurrently *Resolved*, That we have entire confidence in the ability of Mr. Sutro to present to Congressmen and capitalists the claims of the enterprise referred to, knowing that he will prepare with skill, and clearly exhibit the whole statistical and political economical argument bearing in its favor, without overlooking or exaggerating any of its merits.

A handsomely engrossed copy of these resolutions was prepared by the Secretary, per order of the Senate, and forwarded to Mr. Sutro.

REPEAL OF A NEVADA MINING STATUTE. The bill before the Nevada Legislature, repealing the Act known as the "Banks' Location and Possession of Mines Bill," has been approved by the Governor. This law was, in many respects, objectionable, and its repeal will be satisfactory to most of the Nevada miners. It was partial in its operation, applying as it did to the whole State, except Storey county, wherein were, at the time of the passage of the law, most of the richest mines in the State. The provision for the payment of "assessment dues" of two cents per foot per annum, as sufficient to hold a claim, was an abuse unheard of elsewhere. J. Ross Browne, in his recent report on the mines, alludes to this law as in itself showing the need of Congressional interference between the laborer and the monopolist. Hereafter titles will depend upon the local regulations.

The quality of wool is determined by the number of spirals. The best has about thirty "crinkles" in an inch.

PROF. LAYRES' lectures on oratory, to which we alluded in our last, will be given hereafter at the rooms of the Young Men's Christian Association, No. 526 California street, above Montgomery. On account of yesterday being kept as a holiday, the lecture announced for last evening, has been postponed to this evening. These lectures are well worth attending by all who take an interest in such matters. Mr. Layres possesses the happy faculty of making interesting, a subject, which, in most hands, is especially dry and devoid of interest.

DEATH OF A SCIENTIFIC MAN.—Professor Alexander D. Bache, President of the United States Coast Survey, died at Newport, Rhode Island, on the 19th instant, aged sixty years. He was a great-grandson of Benj. Franklin. He was educated at West Point, and held at one time a Professorship in the University of Pennsylvania, and afterwards the Presidency of Girard College. In 1843, he took, at the request of the Government, the position which he occupied at the time of his death. He was a member of several scientific societies, both in this country and in Europe.

ARSENIO IN INK.—It is said that the well known popular French copying ink contains more or less arsenic. Perhaps other inks may also contain that poison. If so, may not the disease which has quite recently made its appearance among clerks and others, who spend the most of their time in writing, and which is known as "pen palsy," owes its origin to the poisonous qualities of the arsenic contained in the ink? The idea that this is the fact has been suggested.

MONO SILVER.—The item in the Sacramento *Union*, copied into our issue of Jan. 12th, credited 3,000 pounds of silver bullion to the "Chrysopolis" mine, in Blind Spring district, Mono county. This should have been the "Cornucopia" mine. Another shipment from this same mine is chronicled in our last week's issue. We are informed that this mine is the property of a Philadelphia company, and that the bullion referred to was smelted at Partzwick.

DIFFERENCE IN WEIGHT.—A cubic mile of water, at a temperature of 40°, is 900,000 tons heavier than at 50°, and 3,000,000 tons heavier than at 60°. The difference would be caused by the overflow and waste from expansion when raised to the higher temperatures.

ICE BOATING, which has recently become quite a matter of amusement on the Hudson and some other of the northern rivers, will, it is thought, soon be practically applied to business purposes, for conveying freight and passengers. There appears to be money in it.

For California hand-books on California industrial enterprises, such as Prevost's "Silk Growers' Manual," and Hyatt's "Hand-Book of Grape Culture," go to H. H. Bancroft & Co's.

### City Amusements.

METROPOLITAN.—At this theater "Raoul; or the Magic Star," was produced on Monday night, with A. Lehman as "Baron Zambrath," Julien Martinetti as "Courcel," his servant, M. Schmidt as "Raoul," Paul Martinetti as "Artos," and Madame Marzetti as "Ceclia." This is one of the best pantomimes yet produced, and is full of mysterious tricks. Julien Martinetti as "Courcel" meets with numerous disasters, but neither he nor his master seem to be disheartened by their mishaps, or to relinquish their pursuit of the lovers. Paul as "Artos" is also very good. Wednesday night the pantomime was preceded by the comic ballet of the "Milliners," and the "Boquet," the entertainment commencing with "How to settle accounts with your Landlady," by the Howsons.

OPERA HOUSE.—Tuesday night, "The Orange Girl; or the Sacred Trust," was produced for the first time, Mrs. Edwin taking the part of "Jane" the orange girl, and Miss Kingsbury that of "Jennie," the orphan, who is protected by Jane. Friday night, "Fanchon."

ACADEMY OF MUSIC.—Martin, the great professor of magic and ventriloquism, was announced to appear here on Thursday evening, but postponed his entertainment on account of the weather, which has considerably effected the business of all the theaters during this week.

PLATT'S HALL.—Mrs. Lizzie Parker Northrup's concert, also postponed from Thursday night, will take place on Monday evening, Feb. 25th.

Our Free List in San Francisco, will hereafter receive the Press through the post office, postage free.

MINERS' UNION.—The miners in Gold Hill district have formed themselves into a "Union" for mutual aid and protection. A fund will be created for the relief of sick or disabled members, or their families. Four dollars per day is established as the rate of wages.

### National Mineral Land Law, Instructions. Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address DEWEY & Co., office Mining and Scientific Press, San Francisco.

### A Paying Newspaper for Sale.

A one-half interest in one of the best County Papers in the State, is offered for sale on desirable terms. The journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*, or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v14t

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\$10,000 FOR ONE YEAR, ON A VALUABLE Ranch. Title perfect. A liberal per centage given. Apply at No. 410 Kearny Street, Room No. 2, any day, at 5 o'clock P. M. 8v14t

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### "YACHT HENRIETTA,"

Which are the most dressy Hat ever introduced on the Pacific Coast.

Call and see them. 8v14

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Office—412 Clay street. Works—North Beach.

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—

very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire Rope—For Ships' Rigging, Derrick guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks supplied.

Iron and Copper Wire Cord—½ to ½-inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Size in In.	Size in In.	Size in In.	Size in In.	Size in In.
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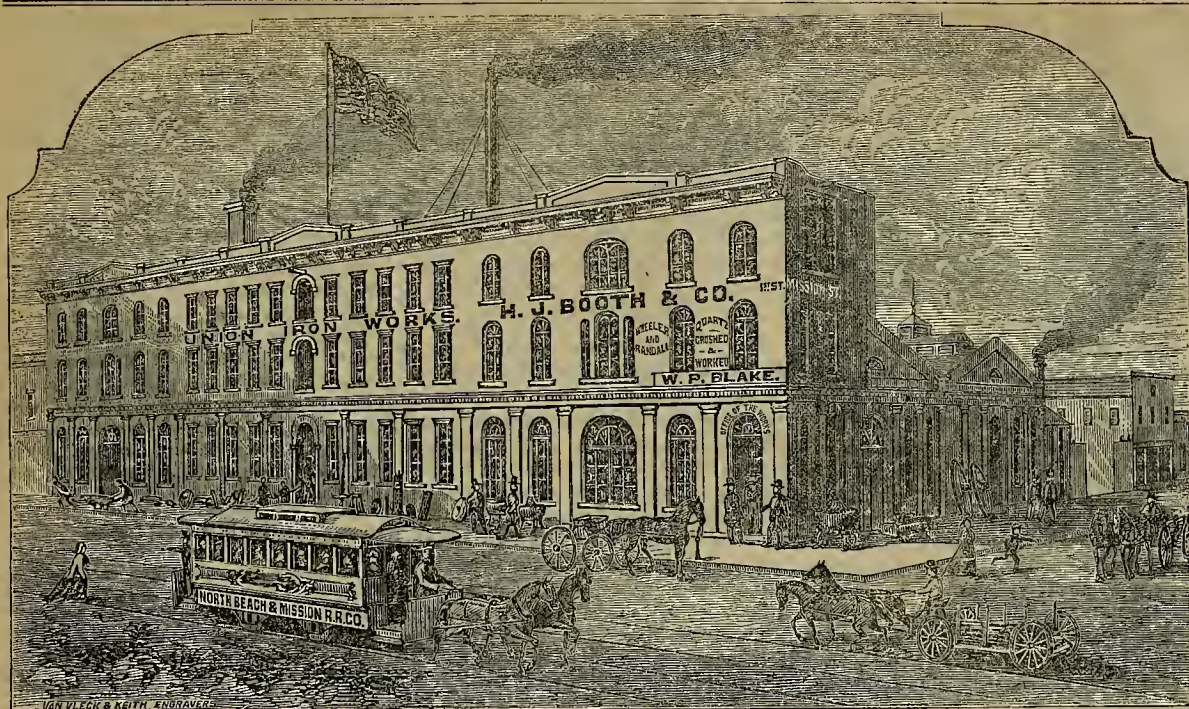
Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6in9p

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**NEW GRINDER AND AMALGAMATOR**  
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Dunbar's Improved Self-Adjusting

**PISTON PACKING,**

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All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.

**Old Boilers Repaired**  
**D. CAMERON.**

6v12-ly

**CAPITAL WANTED, NOT LABOR.**—The Nevada Gazette of February 18th, in an article entitled "Immigrant Aid Societies," says:

It is a little remarkable that in the place where the fever for an immigrant aid society prevails, a most brutal mob has just wreaked its vengeance on Chinamen who come in competition with white labor in the market. \* \* \* The truth is, there is more labor in the country to-day than capital willing to employ it, and it is the height of foolishness to import more unless capital comes with it. Give us that, and labor will come without the aid of societies.

THE Nevada Gazette says, the patent for Bradford's "Ore Separator," will expire in the spring. Heretofore, their price has been from \$300 to \$600 each, although they can be made for \$100 to \$150.

**COAL IN SHASTA.**—Shasta county has a coal mine, all ready to assist in working the silver mines of South Fork District, in case they should prove to be what is expected of them.

**LOCUST TREES**, to the amount of a hundred acres, will be planted this year by Josiah Sturgis of Martinez.

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**TO LIGHT A DARK ROOM.**—A room which is so situated, in a narrow street, that it would be nearly dark if furnished with windows of the ordinary style, the glass of which is several inches within the outer face of the wall, can be effectually lighted in the following manner: If, says the *London Builder*, for the window be substituted another in which all the panes of glass are roughly ground on the outside, and flush with the outer wall, the light from the whole of the visible sky and from the remotest parts of the opposite wall will be introduced into the apartment, reflected from the innumerable faces or facets which the rough grinding of the glass has produced. The whole window will appear as if the sky were beyond it, and from every point of this luminous surface light will radiate into all parts of the room.

A gun often becomes foul from use, so that the cap explodes without igniting the powder. Instead of pricking powder into the tube, it is said that the best way is to drive a pine plug into it, and cut it off even with the top. The cap is then put on, and the gun is sure to go.

The priceless paintings in the Louvre have been photographed. Copies are in New York. The works of Raphael and Michael Angelo can be seen in all their perfection, as well as imperfection. Every wrinkle and every crack in the canvas is faithfully reproduced.

The new woolen mill is to be lighted by gas made on the premises, from pine wood and animal refuse, by Ensley's process, which we described in our issue of January 12th.

The GREAT EASTERN, which is only used on great occasions, will convey passengers to the Paris Exposition. She will run regularly between Brest and New York. Wells, Fargo & Co., will be the ticket agents in San Francisco.

MOUNT DIABLO COAL, says the *Stockton Independent*, is increasing in favor for steam engines and for household use.

**Remarkable Cure of J. Calwell.**  
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Sold by all Medicine dealers every where. 4v14-1in

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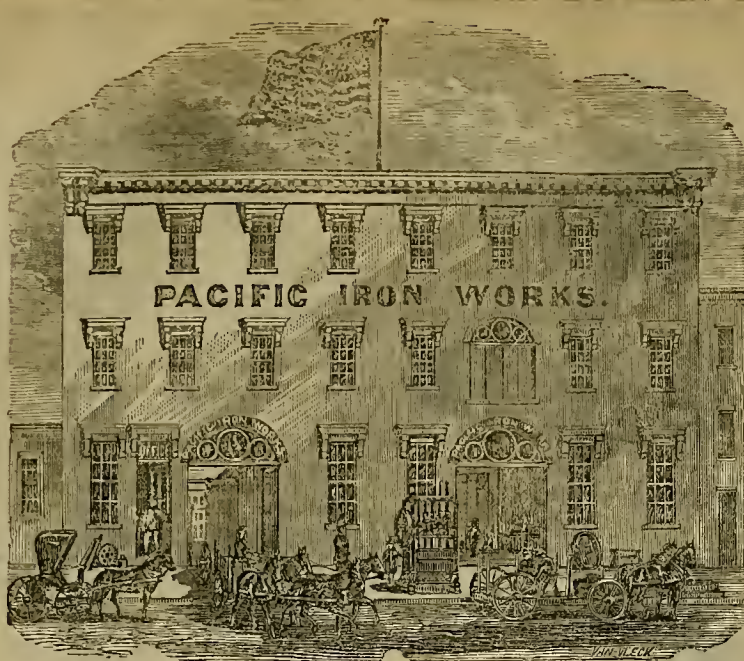
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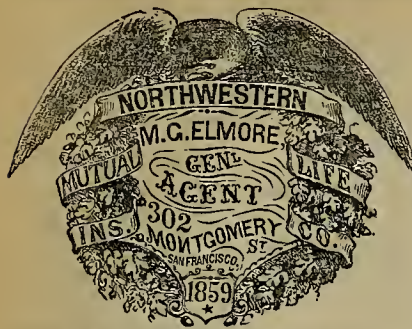
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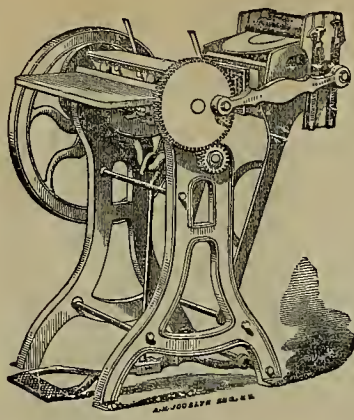
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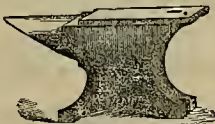
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505 Clay street, corner Sansome, San Francisco.

## New Mining Advertisements.

Chalk Mountain Blue Gravel Company.—Lo-  
cation of Works: Nevada County, California.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
tenth day of January, 1867, the several amounts set op-  
posite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. C. McComb.....	15	150	\$150 00
Isaac Swain.....	bal 24	15	15 00
Marlin White.....	bal 5	20	20 00
S. B. Whipple.....	21	70	70 00

And in accordance with law, and an order of the Board of  
Trustees, made on the tenth day of January, 1867, so many  
shares of each parcel of said stock as may be necessary,  
will be sold at public auction, at the salesroom of Messrs.  
Olney & Co., at No. 418 Montgomery street, San Fran-  
cisco, California, on Saturday, the ninth day of March,  
1867, at the hour of 12 o'clock, M., of said day, to pay said  
delinquent assessment thereon, together with costs of ad-  
vertising and expenses of sale.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner Washington and  
Sansome streets, San Francisco, California. feb23

Evoca Consolidated Copper Mining Company.  
Location of Works: Court Hill District, near Black's  
Ferry, Del Norte County, California.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
fourteenth day of January, 1867, the several amounts set  
opposite the names of the respective shareholders, as fol-  
lows:

Names.	Number of Certificate.	Number of Shares.	Amount.
Wm. M. Rider.....	61	12	\$3 00
P. B. Cornwall.....	143	10	\$2 50
P. B. Cornwall.....	144	10	\$2 50
P. B. Cornwall.....	145	10	\$2 50
P. B. Cornwall.....	146	10	\$2 50
P. B. Cornwall.....	147	10	\$2 50
P. B. Cornwall.....	148	12	\$3 00
J. L. Moody.....	115	112	\$28 00
J. L. Moody.....	116	112	\$28 00
R. Rogers.....	136	112	\$28 00
F. H. Rogers.....	198	12	\$3 00
H. D. Oliphant.....	199	112	\$28 00
H. D. Oliphant.....	200	35	\$8 75
J. B. Baker.....	151	20	\$5 00
W. H. Bernard.....	185	56	\$14 00
D. R. Beckford.....	204	20	\$5 00
A. Howar.....	194	6	\$1 50
Jas. M. Olmstead.....	183	3	\$ 75
E. Barnes.....	183	15	\$3 75
Chas. Yeomans.....	184	36	\$9 00
Chas. Yeomans.....	185	20	\$5 00
Chas. Yeomans.....	201	50	\$12 50
Chas. Yeomans.....	191	50	\$12 50
A. E. O'Neill.....	109	12	\$3 00
A. E. O'Neill.....	110	50	\$12 50
A. E. O'Neill.....	111	50	\$12 50
E. B. Holmes.....	120	25	\$6 25
E. B. Holmes.....	121	25	\$6 25
G. B. McAneny.....	172	62	\$15 50
G. B. McAneny.....	173	100	\$25 00
Wm. Hamill.....	177	50	\$12 50
J. Munson.....	71	30	\$7 50
J. J. Ayers.....	119	112	\$28 00
Charles E. Abbot.....	253	107	\$26 75
F. Collier.....	21	112	\$28 00
E. S. Morison.....	132	25	\$6 25
J. Morison.....	202	50	\$12 50
J. Morison.....	203	50	\$12 50
J. Morison.....	4	25	\$6 25
R. J. Vandewater.....	67	12	\$3 00
R. J. Vandewater.....	68	50	\$12 50
R. J. Vandewater.....	69	50	\$12 50
W. H. Glicks.....	26	25	\$6 25
H. B. Osborn.....	230	50	\$12 50

And in accordance with law, and an order of the Board of  
Trustees, made on the fourteenth day of January, 1867,  
so many shares of each parcel of said stock as may be ne-  
cessary, will be sold at public auction, by Messrs. Olney &  
Co., at No. 418 Montgomery street, San Francisco, Cal. on the  
thirteenth day of March, 1867, at the hour of 2 o'clock P. M.  
of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

R. S. CLYDE, Secretary.  
Office of Company, No. 532 Mercantile street, Room No. 3,  
San Francisco, California. feb23

Emelia Mining Company, State of Guerrero,  
Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twelfth day of  
February, 1867, an assessment of seventy-five cents per  
share was levied upon the capital stock of said Company,  
payable immediately, in United States gold and silver coin,  
to the Secretary, Room No. 1 Crim House, No. 523 Kearny  
street, San Francisco, California.

Any stock upon which said assessment shall remain un-  
paid on the twenty-second day of March, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made be-  
fore, will be sold on Monday, the eighth day of April, 1867,  
to pay the delinquent assessment, together with costs of  
advertising and expenses of sale. By order of the Board of  
Trustees.

MAX. BURCKHARDT, Secretary.  
Office, Room No. 1 Crim House, No. 523 Kearny street, San  
Francisco, Cal.

N. B.—The above assessment is levied in place of the as-  
sessment levied October 26th, 1865, which was revoked at a  
meeting of the Board of Trustees, held February 24th, 1867.  
All stockholders who have paid on the said assessment levied  
October 26th, 1865, will be credited the amount so paid  
on the assessment of February 24th, 1867. By order of the  
Board of Trustees.

MAX. BURCKHARDT, Secretary.

Kern River Gold and Silver Mining Company,  
Cove District, Kern County, California.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
third day of January, 1867, the several amounts set op-  
posite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. Staples.....	37	30	\$30 00
F. H. Staples.....	52	30	\$30 00

And in accordance with law, and an order of the Board of  
Trustees, made on the third day of January, 1867, so many  
shares of each parcel of said stock as may be necessary,  
will be sold at public auction, at the Company's office, No.  
302 Montgomery street, San Francisco, Cal., on the twelfth  
day of March, 1867, at the hour of 12 o'clock, M., of said  
day, to pay said delinquent assessment thereon, together  
with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.  
Office, No. 302 Montgomery street, San Francisco. feb23



**Libertad Gold and Silver Mining Company.**

District of Ures, Sonora, Mexico.  
The stockholders of the above-named Company, are notified to attend the Annual Meeting thereof, which will be held in the Fourth District Court Room, City Hall, on WEDNESDAY EVENING, March 6th, 1887, at 7 1/2 o'clock.  
JAN 21 LAWRENCE C. OWEN, Secretary.

**Lady Bell Copper Mining Company, Low Divide Mining District, Del Norte County, California.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J. V. Ayers.....	95	25	\$2 50
Francis Cummins.....	153	10	1 00
D. M. Henderson.....	343	50	5 00
D. M. Henderson.....	341	50	5 00
D. M. Henderson.....	388	25	2 50
D. F. Richards.....	235	60	6 00
D. F. Richards.....	239	50	5 00
D. F. Richards.....	240	50	5 00
D. F. Richards.....	241	50	5 00
B. Austin.....	353	50	5 00
Jno. L. Warren.....	302	5	50

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the fourth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

C. HEYWOOD, Secretary.

Office, 311 Market street, San Francisco, Cal. feb 23

**Mining Notices—Continued.****Arizona Consolidated Mining Company, Eureka District, Arizona Territory.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Roberts.....	11 and 35	25	\$45 00
Z. B. Heywood.....	Sundry	37 1/2	187 50
Almon Somers.....	44	25	12 50
Jas. S. Smith.....	206, 222	100	50 00
W. J. Miller.....	276, 215, 243, 286	859	429 50
M. E. Austin.....	276	10	5 00
Willard Hodges.....	129, 166, 211	19	27 50
Albert Knapp.....	251	6	12 00
M. Kershaw.....	785	13	6 50
Mary Austin.....	67	5	2 50
Mary C. Leonard.....	238	10	5 00
E. C. Chase.....	236	14 1/2	72 50
J. C. Bartlett.....	165	10	5 00
H. Ben-on.....	88, 89, 90, 155, 194, 276	132	66 00
Lucey Benson.....	88	10	5 00
L. H. Harmon.....	263	45	32 50
L. H. Harmon.....	112	6	2 50
James Fullman.....	127	20	10 00
Jesse Jewell.....	124	10	5 00
Jno. J. Scott.....	150	5	2 50
Chas. Bunnemann.....	234	10	5 00
Wm. H. Heywood.....	216	10	5 00
Leone & Jordan.....	231	5	2 50
S. Plunkham.....	262	10 1/2	6 25

And in accordance with law, and an order of the Board of Trustees, made on the sixteenth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the fourth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

G. W. BUNNELL, Secretary.

Office, No. 611 Clay street, San Francisco. feb 16

**Blue Ledge Gold and Silver Quartz Mining Company, Kelsey District, El Dorado County, California.**

Office, No. 5 Government House, corner of Washington and Sansome streets, San Francisco.  
Notice is hereby, that a meeting of the stockholders of the above named Company, will be held on the twenty-third day of February, 1887, at 10 o'clock P. M. of that day, for the purpose of altering the By-Laws of the Company, and transacting such other business as may come before said meeting.

J. M. BUFFINGTON, Secretary.

San Francisco, February 4, 1887. feb 9

**Caution!**

**Cosula Silver Mining Company.**—The following Certificates of Shares in the Capital Stock of the above named Company, were sold to pay delinquent assessment and expenses of advertisement and sale, on the eleventh day of February, 1887, at the auction rooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, at twelve o'clock, noon:

In name of	No. Certificate.	No. Shares.
P. J. Brogan.....	686	25
James Laddley.....	682	133
A. H. Murdock.....	683	25
I. D. Thompson.....	685	25

Parties are hereby cautioned against purchasing the above described Certificates of Stock.

CHAS. BAUM, Secretary.

Office, No. 610 Battery street, opposite the Custom House, San Francisco, Cal. feb 11

**Cherokee Flat Blue Gravel Mining Company, Cherokee Flat, near Oroville, Butte County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of January, 1887, an assessment of five (\$5) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Company's office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of February, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. DE SENALHAC, Secretary.

Office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, Cal. feb 2

**Camargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1887, an assessment of twenty dollars per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, 402 Front street, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. feb 16

**Postponements and Alterations.**—Secretaries are requested to give notice of postponements, or alterations which they may desire made in their advertisements at their earliest convenience. New advertisements should be sent in as early as possible.

The Mining and Scientific Press commenced a new volume January 3, on new type of California make—the first of the style, the editors say, which has yet appeared in print on this coast. It looks well.—Humboldt Register.

**Chippelon Mining Company—District of Ures, Sonora, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of January, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 318 California street, (up stairs) San Francisco, California.  
Any stock upon which said assessment shall remain unpaid on the eighth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of March, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. feb 2

**Diamond Copper Mining Company. Location: Rockland District, Del Norte County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of February, 1887, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, Room No. 33 Montgomery Block, San Francisco, or to ROSS B. RABALA, the Company's Superintendent, at Crescent City, Del Norte County, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, Room No. 33 Montgomery Block, corner of Montgomery and Washington streets, San Francisco, Cal. feb 9

**George Washington Gold and Silver Mining Company—Location of Works: Silver Mountain District, Alpine County, Cal.**

Assessment No. 17.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of February, 1887, an assessment of three dollars and fifty cents (\$3.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.

Office, 338 Montgomery street, San Francisco. feb 9

**Julia Gold and Silver Mining Company, Storey County, State of Nevada.**

Notice.—There are delinquent, upon the following described stock on account of assessment levied on the tenth day of January, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Gasson, F.....	150	50	\$50 00
Perl Wagner.....	151, 152, 25-a	37	20 00
Lanzwever.....	153	20	20 00
Mackoon, B.....	155, 156, 25-a	50	50 00
Mibelle, J.....	39	10	10 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on the sixth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. NOEL, Secretary.

Office, 607 Washington street, San Francisco, Cal. feb 16

**Mount Teabow Silver Mining Company—Location of Works: Cortez District, Lander County, State of Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of February, 1887, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-first (21st) day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eleventh day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.

Office, 331 Montgomery street, San Francisco. feb 16

**North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Hugh Whitell.....	265	12	\$150 00
Hugh Whitell.....	266	50	625 00
Mary O'Neill.....	262	2	25 00
Nathl Page.....	253	10	125 00
Nathl Page.....	254	4	50 00
Nathl Page.....	255	10	125 00
Nathl Page.....	256	12 1/2	156 25
Nathl Page.....	257	6	62 50
Nathl Page.....	258	6	62 50
Nathl Page.....	259	6	62 50
J. B. Palmer.....	260	100	1250 00
F. F. Strother.....	236	5	62 50
Wm. L. Utton.....	228	6	62 50
Wm. L. Utton.....	229	10	125 00
Wm. L. Utton.....	230	10	125 00
W. Loveton.....	231	250	3125 00
Wm. L. Utton.....	239	5	62 50
Livy K. Baker.....	213	8	100 00
I. Rowell.....	218	40	500 00
I. Rowell.....	219	10	125 00
Chs. de Ro.....	205	23	287 50
Chs. A. Piper.....	201	47	587 50
Chs. A. Piper.....	202	47	587 50
Chs. B. Simpkins.....	270	100 1/2	1253 75
Geo. H. Ensign.....	155	69 1/2	791 67
Geo. H. Ensign.....	179	30 1/2	377 50
F. F. Loveland.....	241	109	1362 50
L. F. Loveland.....	244	62	775 00
L. F. Loveland.....	245	172	2150 00
L. F. Loveland.....	246	389 1/2	4862 50
L. F. Loveland.....	248	359	4487 50
L. F. Loveland.....	249	288	3600 00
L. F. Loveland.....	250	114	1425 00
L. F. Loveland.....	251	109	1362 50
L. F. Loveland.....	252	115	1437 50
R. Bayerger.....	146	30	375 00
Alonzo Young.....	133	10	125 00
W. F. Hale.....	137	10	125 00
W. F. Hale.....	210	41	512 50
Geo. Burrows.....	118	8	100 00

Names.	No. Certificate.	No. Shares.	Amount.
Geo. Barstow.....	209	59	737 50
Geo. Barstow.....	221	12	150 00
Geo. Barstow.....	224	67	837 50
Geo. Barstow.....	231	10	125 00
H. S. Wheeler.....	162	2	25 00
Geo. Hudson.....	107	25 1/2	318 75
John G. Klumpke.....	143	30	375 00
John G. Klumpke.....	145	20	250 00
Nicholas Lundin.....	305	149	1862 50
Prosper Huernie.....	98	2	25 00
Prosper Huernie.....	99	2	25 00
Prosper Huernie.....	100	2	25 00
W. J. Stewart.....	104	33 1/2	418 75
James T. Boyd.....	83	42	525 00
Restome Perry.....	92	5	62 50
Restome Perry.....	93	10	125 00
Alfred Barstow.....	235	64	800 00
Alfred Barstow.....	236	13	162 50
R. F. Norrison.....	174	98	1225 00
R. F. Norrison.....	175	12	150 00
John A. Zoller.....	61	2	25 00
John A. Zoller.....	235	3	37 50
E. L. Smith.....	30	3	37 50
Calvin Fay.....	108	8	100 00
B. F. Moulton.....	269	2	25 00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Friday, the fifteenth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. W. KINNEY, Secretary.

Office, No. 418 California street, Room No. 5, third floor, San Francisco. feb 12

**Kettlelake Gold and Silver Mining Company, Brown's Valley, Yuba County, California.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fifth day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bradley, M.....	7	30	\$30 00
Bristol, A. S.....	36	10	10 00
Broe, A.....	28	8	8 00
Broe, A.....	29	8	8 00
Barbat, I.....	32	20	20 00
Carroll, T. P.....	39	34 1/2	428 75
Carroll, T. P.....	40	34 1/2	428 75
East, H.....	21	96	96 00
Hawley, Wm.....	12	39	39 00
Hawley, Wm.....	13	39	39 00
Hughes, Th. S.....	31	40	40 00
Reland, G. H.....	10	40	40 00
Bugles, D. W.....	37	10	10 00
Lalio, L. H.....	174	25	25 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of J. Middleton & Son, 401 Montgomery street, San Francisco, Cal., on Monday, the twenty-fifth day of February, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOHSE, Secretary.

Office, 318 California street, Up-stairs, San Francisco. feb 9

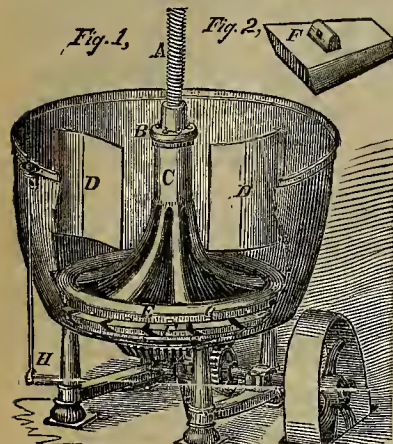
**Siskiyou Mining Company. Location of Works: Middle Fork of Humboldt Creek, in the County of Siskiyou, State of California.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of December, 1886, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Ferd Wagner	210	10	\$50 10
Ferd Wagner	215	50	50 00
J. S. Cale	81	25	125 00
J. S. Cale	81	25	125 00
C. A. Helmering	212	1	5 00
William Menzel	27	10	50 00
Wm B Maxwell	154	6	30 00
Charles Wood	167	50	250 00
Agnes Hewett	2	1	5 00
Clement Hays	115	2	10 00
E. J. Pfeiffer	15	10	50 00
E. J. Pfeiffer	16	15	75 00
E. J. Pfeiffer	214	10	50 00
Louis Moore	34	25	125 00
Elms Stetter	171	6	30 00
Elms Stetter	196	2	10 00
Bruschel & Weber	107	12	60 00
Ellen Lynch	71	2	10 00
Frederick Wieland	83	6	30 00
Frank Dodge	85	6	30 00
George Burkhardt	89	15	75 00
George Burkhardt	153	3	15 00
John H Lawton	205	2	10 00
J. D. Lawton	204	30	150 00
DeWitt Hulse	124	11	55 00
John D Wilson	46	2	10 00
C. L. Harvey	102	6	30 00
S. S. Keith	112	25	125 00
O. S. Brack	3	3	15 00
Brodwold & Nell	116	2	10 00
Donald Paul	118	3	15 00
Robert A Hunter	119	3	15 00
James Murphy	123	2	10 00
A. B. Goff	136	2	10 00
David S. Hill	141	25	125 00
David N. Coey	143	5	25 00
Van K Hall	163	8	40 00
Van K Hall	173	25	125 00
Jno S Mill n	169	20	100 00
Jno S Millen	178	10	50 00
Levies Teese, Secy	222	25	110 00
E. B. Eggle	192	6	30 00
Olary E Grant	235	12	60 00
Albert Farrar	63	25	125 00
Albert Farrar	134	125	625 00
Henry A Osborn	19	26	130 00
Madison Platt	175	20	100 00
E. C. Boehm	275	10	50 00
John Cammet	221	10	50 00
John Cammet	223	30	150 00
John Cammet	224	105	525 00
John Cammet	225	60	300 00
James Clarke	40	5	25 00
Frances T McDougall	63	16	80 00
Henry A Osborn	19	50	250 00
Wm H Clark	205	10	50 00
Wm H Clark	207	10	50 00
Wm H Clark	218	10	50 00
Wm H Clark	219	25	125 00
Wm H Clark	216	100	500 00
Wm H Clark	217	100	500 00
Wm H Clark	218	100	500 00
Wm H Clark	219	60	300 00
Wm H Clark	220	50	250 00
Wm H Clark	220	10	50 00
Total		1,450	\$7,250 00



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. B is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years' experience in mechanical operations, and may be addressed at San Francisco, or called on at the Millers' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v14tr

HUNTER'S  
IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety percent. of the sulphurets contained in the ore. The sulphurets, if de-fred for shipping, will contain less than one per cent. of sand.

Persons who have sulphurets ore will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

3v14tr One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

VARNEY'S  
PATENT AMALGAMATOR.

## These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

## This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY,  
1v1 San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,

Beale Street, San Francisco,  
23v13-3m

STANDARD SOAP COMPANY'S  
WASHING POWDER.

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material and contains nothing that will injure the finest fabric. Equally as good for use in hard or soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lbs bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12m

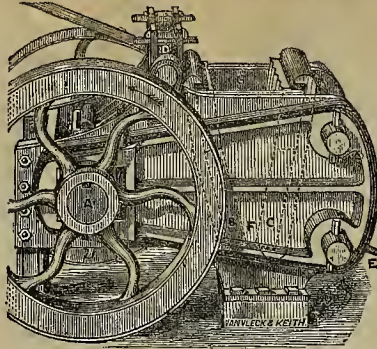
## Brown's Filtering Heater!

FOR PREVENTING INCrustation IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to

AUSTIN A. WELLS, Agent.  
5v14-1y

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:  
No. 1—Or 9-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....550  
No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

## EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county:

RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1866.  
JAMES BRODIE, Esq., San Francisco.—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,  
Supt. Rawhide Ranch Quartz Mill.

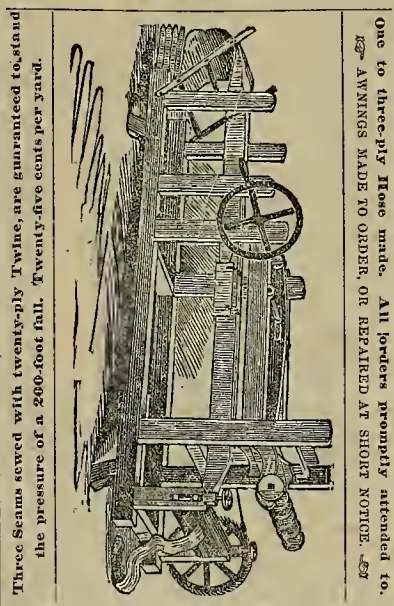
**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.  
Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.  
A drawing and full description of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.  
A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 23d, 1866.  
**BRODIE & RADCLIFF,**  
Express Building, 402 Montgomery street, San Francisco.

12v13tr

## PATENT HYDRAULIC HOSE SEWING

By S. HOWARD.



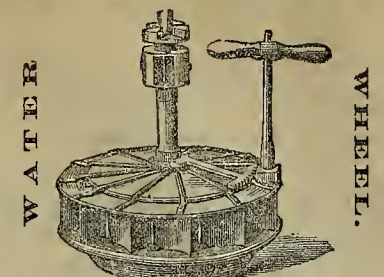
No. 326 DAVIS STREET, San Francisco.

22v13-3m

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator, has double Millers, Rolling Shoes and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 G. W. STRONO, Assayer.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.  
CALIFORNIA EXPERIENCES.—E. Stockton, Folsom; O. Simmons, Oakland (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular to  
**KNAPP & GRANT,**  
Agents for California,  
25v13-1yq 310 Washington street, San Francisco

## Hunt's California Pump

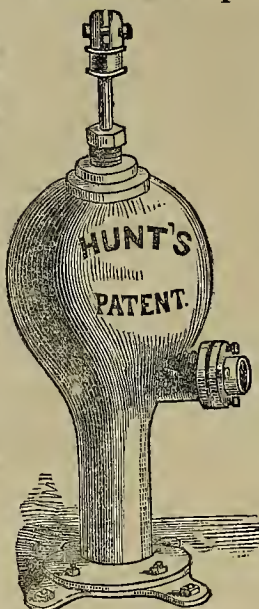
Has all the advantages of any other Pump, is one third cheaper and more durable, will draft water as deep and as force as high as any others, is not liable to get out of order, and is easily repaired by any one.

All these Pumps are fitted to work by hand if desired.

These Pumps have given good satisfaction to all who have used them during the last three years. Good judges have examined and pronounced them to be the cheapest and best Pumps in use.

Manufactured at Hunt's Windmill Factory, 23 Second Street and 110 Jessie Street.

Also, Tread Horse Powers, Pumping Frames for Irrigating, Saw Frames, Sweep Horse Powers and Frames, all in one frame, the horse to travel around the frame.



## PRICES OF HUNT'S CALIFORNIA PUMPS.

No. 3—3-inch cylinder, 6-inch stroke.....\$30 00  
No. 4—3 1/2-inch cylinder, 6-inch stroke.....35 00  
No. 5—4-inch cylinder, 6-inch stroke.....40 00  
No. 6—5-inch cylinder, 8-inch stroke.....45 00  
No. 8—8-inch cylinder, 12-inch stroke.....90 00  
A liberal discount made to the Trade.  
For further particulars, send for Circular.

E. O. HUNT,  
21v13tr 23 Second and 110 Jessie streets, San Francisco.

BRUCKNER'S  
Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1865.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,

15v12 416 Market street, San Francisco.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now on exhibition at the Franklin Foundry, Fremont street. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

1v143m

JAMES HITCHENS.

## Notice to Miners,

## Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

18v13-1y

Stove Store, No. 125 Clay street, below Davis.

SUBSCRIBERS who do not receive the Mining and Scientific Press in due time, are requested to inform the publishers

## New Patents and Inventions.

Under this heading we shall mention, from week to week, as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**HEADING AND THRESHING.**—The Oregonian speaks of the invention, by Mr. Davis, of Yamhill county, Oregon, of a combined header and thresher, which proved so eminently successful last fall, that the necessary steps have been taken to secure a patent for the same; while arrangements are at the same time being made at the Oregon Iron Works in Portland, for the immediate manufacture of a number of the machines. The utility of the invention will be fairly tested at the next season's harvest. The inventor claims that by the use of his machine, three persons with two horses, will cut, thrash and sack, ready for market, from twelve to eighteen acres of grain per day, at a cost not exceeding half that of any other machine.

**DEODORIZING DEVICE.**—A simple device has been invented in England for disinfecting and deodorizing the effluvia from sewers, drains and sinks. It consists of a wire screen filled with charcoal or other disinfectants, and placed so as to occupy the only outlet for the noxious gases, and compel them to pass through it. The same contrivance may also be placed in the rain pipes, so as to pass all the rainfall from the roofs through the disinfectant into the sewers. The London Board of Works adopted this plan during the late visitation of cholera; with what effect has not been reported.

**DEODORIZATION OF VULCANIZED RUBBER.** The offensive sulphurous smell of india-rubber goods, is a serious drawback upon their otherwise great convenience. Mr. Stephen Bourne, an Englishman, has patented a process for removing this odor by treating the fabrics in a heated chamber with charcoal, and in preference, animal charcoal, as more rapid in its effect. The operation may be conducted simultaneously with the vulcanizing; the apparatus required being very simple.

**A NEW ROCK-DRILLING MACHINE.**—The London journals announce the exhibition in one of the suburbs of that city of a contrivance invented by an English engineer, which he calls "patent tunneling and shaft-sinking machinery." This machinery is described as a small stone-drilling engine, placed upon an iron table, which is pivoted on the end of a horizontal arm. A cast-iron piece, consisting of two sockets placed and fixed rigidly at right angles with one another, connects this arm with a vertical column which is supported on a wrought-iron frame on wheels. This construction enables the drilling engine to be moved and placed so as to drill a hole in any direction. It weighs but 105 pounds, and the engine is worked with compressed air, the drill having both a forward and revolving motion. This drill is driven against the surface of the rock with great force and rapidity until a hole is made of sufficient depth for blasting. In five minutes it has scooped out a hole of six inches depth in solid rock; and it can be used not only horizontally, but at any angle. This machine is employed in France in several mines and quarries, and is said to be operated at but two-thirds the cost of hand labor in that country of low wages. This drill differs essentially from that in use on Mount Ceniz.

## PATENTS RECENTLY ISSUED.

**MACHINE FOR FINISHING LEATHER.**—Edward Fitzhenry and Isaac Ball, Portland, Oregon: We claim, 1st, The set-screws, D', and rod, D, with the springs, E, substantially as and for the purpose set forth. 2d, The plate, B, pivoted to the plates, A, so as to communicate motion to the rubbers centrally, and without pressing upon the springs attached to the sliders. 3d, In combination with the plate, B, we claim the rods, G, and pins, G', for the purpose of raising the sliders and brushes when not in action, substantially as set forth. 4th, The jaws, F, and I, hinged substantially as set forth, in combination with the hair-spring, I, substantially as and for the purpose set forth. 5th, In combination with the jaws, F, we claim the springs, K, and brushes, K', substantially as set forth. 6th, The cleaner, S, in combination with the sliders, F', operating substantially as and for the purpose set forth. 7th, The lever, L, and notched plates, O, or their equivalents, in combination with the rods, G, attached to the jaw, F, substantially as and for the purpose set forth. 8th, The arrangement of the points, M', so as to permit the raising of one or all the rubbers, substantially in the manner and for the purpose set forth.



**WAGES PROPORTIONED TO SKILL.**—From one of a series of articles in the Owyhee *Avalanche*, we extract the following: "The most intelligent and skillful workman will always perform the cheapest labor. A man that has had experience in different mines, or like any mechanic, has learned his trade, should occupy the same relative position that journeymen do to apprentices in any other business. The experienced miner is, in every sense of the word, as much a mechanic as the carpenter, machinist and blacksmith, and should be so considered."

\* \* The skill and judgment of the miner is a source of revenue to his employer in saving material. He will use less powder, will measure and cut his fuse the proper length, will destroy less hammer, pick and shovel handles, and will make all kinds of tools last longer than the inexperienced man."

\* \* My impression is, that persons who are new in the business should receive apprentices pay, until such time as they are able to do journeyman's work. I believe that it is impossible to make a true estimate of the value of a mining interest, unless intelligent and skillful labor can be employed, as it is impossible for any other to perform a regular task. \* \* Such men, however, demand all the comforts of life, and where the comforts cannot be supplied, the wages must be correspondingly larger to compensate them for this inconvenience."

**EARTHQUAKE IN NEW YORK.**—The Rochester *Union* says: "On Sunday afternoon and evening two distinct shocks of an earthquake were experienced in the southwest corner of this county and in the adjoining county of Livingston. The first shock came about 5 p. m., attended by a rumbling sound, which appeared to come up from the southwest and pass away to the northeast. Buildings were shaken in the village of Mumford, and people sitting in their houses were startled by the sensation produced. Between 8 and 9 p. m. another and a lighter shock was experienced. The first shock was sensibly experienced in the village of Caledonia, Livingston county."

**ROSS BROWNE.**—The clause in the appropriation bill devoting \$10,000 for another year to the "procuring of reliable statistical information" in regard to mining matters on the Pacific Coast, was stricken out by the House. Several attempts were made by Mr. Bidwell to have the matter reconsidered, but without success.

**TABOSE.**—In Mono, Tulare and Fresno counties, a peculiar root called by the Indians *Tabose*, is found. It has the flavor of a chestnut, and is a favorite food of Indians and gophers. It has been suggested that it would be as well worth cultivating by our farmers as the peanut.

**CASTOR BEAN.**—There are two varieties of castor bean. One, the white, produces about thirty bushels to the acre, and "pops" so as to lose half the product; the other, the red, produces seventy-five to eighty bushels to the acre, and *don't* pop.

## MELLVILLE C. KEITH, M. D.

Homeopathic Physician,  
No. 25 Montgomery st., opposite the Lick House, (Room 12,  
SAN FRANCISCO,  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
18v13 6m1r

## Job Printing Press for Sale--\$250.

A Largest Size (half medium) RUGGLES' BEST JOB  
PRESS, in fine order and good as new, can be had for  
\$250, cash—lowest price. Warranted. Apply to  
DEWEY & CO.,  
Mining and Scientific Press Office.

## WE ARE NOW OFFERING OUR IMMENSE STOCK

## Fine Custom Made Clothing

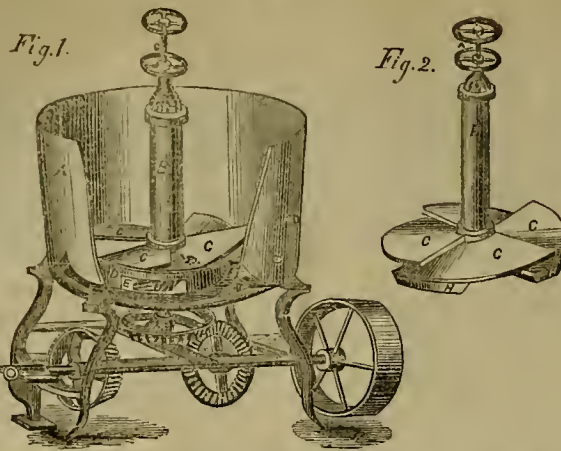
—AND—  
Gents' Furnishing Goods  
AT PRICES THAT DEFY COMPETITION.  
Our Stock of Clothing Consists of  
ALL THE LATEST STYLES

BOTH OF MATERIAL AND FINISH.  
A Large Assortment of  
Trunks, Valises, Carpet Bags, Blankets, Etc.,  
AT EXTREMELY LOW PRICES.  
J. R. MEAD & CO.,  
8v10 Cor. of Washington and Sansome streets.

ELECTROTYPE CUTS, ENGRAVINGS, Etc.—Our Job Printing  
Office is abundantly supplied with elegant engravings, or-  
naments, and other embellishments to suit the various  
branches of industry in this State.

## Gaston's Screw Grinder and Amalgamator

—IS—  
The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with a part of its side removed, and fig. 2 the screw muller, and its shoes. The letters *s* show the threads of the screw; *l*, its shoes, and *D* a low cylinder within which the screw rotates; *E*, represents open spaces through the base of the cylinder, and *F*, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, *E*, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

## HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

## Illuminating, Lubricating, —AND— PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
TANNERS', NEATFOOT, BOILED AND RAW  
LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

## SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

## Lamps and Lamp Stock!

25v An elegant and complete assortment on hand. 25v  
1v13-3m1r 414 Front street, San Francisco.

## PACIFIC POWDER MILL

COMPANY'S

## BLASTING POWDER!

MANUFACTURED

## IN MARIN COUNTY,

CALIFORNIA.

FOR SALE BY

## HAYWARD, COLEMAN & CO.,

AGENTS,

414 Front Street, San Francisco.

3v14-1m

## IMPORTANT

## WORKERS OF GOLD & SILVER ORES.

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on MR. WILLIAM SLOSSON, at Prof. W. P. Blake's Office, and obtain a Business Circular, just published by the WERTZ AMALGAMATION COMPANY of New York, who have secured, under the Patent of Prof. Henry Wurtz, the sole and exclusive right to the use of sodium in amalgamation. Mr. Slosson is prepared to supply the licenses of the Company, with the material for applying this new and wonderful discovery by which, in the words of President Burnett, of Columbia College, "two grains of gold may be gathered where but one was before." 19v13-2m

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

## WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

American and Foreign Patents.—Letters Patent for Inventors can be secured in the United States and foreign countries through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## JOHN TAYLOR & CO.

IMPORTERS,

AND DEALERS IN

## ASSAYERS' MATERIALS,

Druggists' & Chemists' Glassware,

Photographic Stock, Etc.

512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

## ASSAY AND BULLION BALANCES,

And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast.

A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' Sundries, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

## WOODWARD'S GARDENS!

## MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

Open Every Day!

ADMISSION:

To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

## Baldness! Baldness!!

CAN BE PREVENTED, BY USING

## Mayhew's Balsamic Hair Stimulant!

THIS PREPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

W. E. MAYHEW, Druggist,

N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13-6w

## Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT Lectures on FUNCTIONS and DISORDERS of the Nervous System and Reproductive Organs, to be had by addressing and inclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

## HALL'S SARSAPARILLA,

YELLOW DOCK AND IODIDE OF POTASS.

THE BEST BLOOD PURIFIER KNOWN.

Persons that are troubled with Rheumatism, Scrofula, Neuralgia, Morbid Liver, Salt Rheum, Pimples, Boils, or any of the many diseases that originate from Impure Blood, would find it much to their advantage to give this justly celebrated article a trial. One or two bottles are quite sufficient to convince the most skeptical of its merits. It contains neither Spirit, Arsenic nor Mercury, which cannot be truly said of any other preparation called "Sarsaparilla."

SHEPARDSON & GATES, Prop's.

N. W. cor. Sansome and Commercial sts.

23v13-3m

## TRUSSES! TRUSSES!!

Abdominal Supporters!

Shoulder Braces, Etc., Etc.

WE WOULD CALL THE ATTENTION OF DEALERS and others to our complete assortment of these goods, including HARRIS & HARRIS' Celebrated FALL AND SOCKET REVERSIBLE TRUSS which is decidedly the best article ever introduced into this market. By a combination of the movement of the ball and socket, and the movable arm, any desired angle may be obtained. Call and examine for yourselves. A liberal discount to the trade. SHEPARDSON & GATES, Agents, Corner Sansome and Commercial streets. 22v13-3m

## Rheumatism!!

Still Another Witness!

LATROUS, Cal., Sept. 19, 1866.

(White Oak Township, El Dorado Co.)

This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than a slight and temporary relief.

About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably put it to flight. I therefore cordially recommend it to the afflicted as an unfailing remedy for Rheumatism. FRED'K FABER.

25v13 RICHARDS' REMEDY is for sale by  
H. BOWMAN, Druggist, Sacramento,  
And by Druggists generally.

## The Mercantile Gazette

—AND—

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13v13tf STEAMER DAY.

## REPORT

—OF THE—

## COMMITTEE

—ON—

## SEWING MACHINES!

California State Fair, 1866:

"To THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

## FOR GENERAL FAMILY USE

—THE—

## "FLORENCE"

—IS—

"THE BEST."

(Signed)

J. N. ANDREWS,  
THOMAS C. McHALE,  
L. ELKUS.

25v If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

SAMUEL HILL,

General Agent, 111 Montgomery street, San Francisco.

17v13



**A SMART GIRL.**—Miss Fannie Paine, a miss only thirteen years of age, has, for about a year, performed the duties of paymaster in the Eagle Works Manufacturing Company at Chicago. In the last eight months of 1866, she paid out over \$250,000, keeping the time sheets, pay roll, and a private account book with each of 400 men employed in that establishment. She receives the money weekly from the bank, settles and keeps her balances with the cashier. She does this on a salary of \$625 per annum, currency. She also takes two music lessons each week, and attends regularly as a scholar in an evening Commercial College, after standing ten hours each day at her desk. Her health does not appear to be at all affected by her duties; she has never known a day of sickness.

**GASTON'S SCREW AMALGAMATOR.**—Chas. Foreman, Supt. of the Eclipse mine, Gold Hill, Nev., writes Mr. Gaston that the best feature of his pan is its "rapid grinding with little power." Messrs. Stiles & Stansfield, of Nevada City, Cal., pronounce it "A No. 1," as an amalgamator, and say that the loss of quicksilver is very slight.

**THE PACIFIC ASPHALTUM COMPANY** have purchased, says the Los Angeles News of the 15th instant, the brea mines, some six miles from this city. Men are getting out asphaltum for shipment to San Francisco. Several tons were shipped yesterday by the Orizaba.

**A PRIZE.**—A. H. Lee, a small grocer in Illinois, held the lucky ticket which recently drew, as a prize, the Chicago Opera House, worth \$600,000. It cost him a ten dollar greenback.

SOME bold character has predicted that some of the men who assisted in laying the Atlantic Cable, will live to see a tubular sub-marine railway along side of it.

**GAS.**—An abandoned oil hole in Erie, Pa., furnishes an abundant supply of gas for lighting and heating a manufacturing establishment in that neighborhood.

**BLASTING BY ELECTRICITY.**—The continuation of last week's article on this subject, promised for the present issue, will appear next week.

**CANARY BIRDS.**—Eighty thousand dollars worth of German canary birds were imported into the United States in 1866.

**TWELVE** thousand tons of sugar was produced in the Sandwich Islands in 1866.

**ZANTE CURRANTS**, better than the imported, are raised in Santa Clara county.

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## Mining and Scientific Press PATENT AGENCY.

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## NATIONAL MINERAL LAND ACT.

Having received an authentic copy of this law, we reproduce it in our columns. Our former publication, however, was substantially correct:

SECTION 1. Be it enacted, That the mineral lands of the public domain, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and occupation by all citizens of the United States, and that those who have declared their intention to become citizens, subject to such regulations as may be prescribed by law, and subject also to the local custom or rules of miners in the several mining districts, so far as the same may not be in conflict with the laws of the United States.

SEC. 2. And be it further enacted, That whenever any person or association of persons claim a vein or lode of quartz or other rock in place, bearing gold, silver, copper, or other mineral, having previously occupied and improved the same according to the local custom or rules of miners in the district where the same is situated, and having expended in actual labor and improvements thereon an amount of not less than \$1,000, and in regard to whose possession there is no controversy or opposition, it shall and they shall also post such notice in his office for claimants to file in the local land office a diagram of the same, so extended laterally or otherwise as to conform to the local laws, customs and rules of miners, and to enter such tract and receive a patent therefor, granting such mine, together with the right to follow such vein or lode, with its dips, angles and variations, to any depth, although it may enter the line of adjoining land, and adjoining shall be sold subject to this condition.

SEC. 3. And be it further enacted, That upon the filing of the diagram as provided in the second section of this act, and posting the same in a conspicuous place on the claim, together with a notice of intention to apply for a patent, the Register of the Land Office shall publish a notice of the same in a newspaper published nearest to the location of said claim, and shall also post such notice in his office for the period of ninety days; and after the expiration of said period, if no adverse claim shall have been filed, it shall be the duty of the Surveyor General, upon application of the party, to survey the premises and make a plat thereof, endorsed with his approval, designating the number and description of the location, the value of the labor and improvements, and the character of the vein exposed; and upon the payment to the proper officer of five dollars per acre, together with the cost of such survey, plat and notice, and giving satisfactory evidence that said diagram and notice have been posted on the claim during said period of ninety days, the Register of the Land Office shall transmit to the General Land Office said plat, survey and description, and a patent shall issue for the same thereupon; but said plat, survey or description shall in no case cover more than one vein or lode, and no patent shall issue for more than one vein or lode, which shall be expressed in the patent issued.

SEC. 4. And be it further enacted, That when such location and entry of a mine shall be upon unsurveyed lands, it shall and may be lawful, after the extension thereto of the public surveys, to adjust the surveys to the limits of the premises according to the location and possession, and plat aforesaid, and the Surveyor General may, in extending the surveys vary the same from a rectangular form to suit the circumstances of the country and the local rules, laws and customs of miners; Provided, That no location hereafter made shall exceed two hundred feet in length along the vein for each locator, with an additional claim for discovery to the discoverer of the lode, with a right to follow such vein to any depth, with all its dips, variations and angles, together with a reasonable quantity of surface for the convenient working of the same as fixed by local rules; And provided further, That no person may make more than one location on the same lode, and not more than three thousand feet shall be taken in any one claim by any association of persons.

SEC. 5. And be it further enacted, That as a further condition of sale, in the absence of any legislation by Congress, the local Legislature of any State or Territory may provide rules for working mines, involving easements, drainage and other necessary means to their complete development, and those conditions shall be fully expressed in the patent.

SEC. 6. And be it further enacted, That whenever any adverse claimants to any mine located and claimed as aforesaid, shall appear before the approval of the survey, as provided in the third section of this act, all proceedings shall be stayed until a final settlement and adjudication in the Courts of competent jurisdiction, of the right of possession to such claim, when a patent may issue, as in other cases.

SEC. 7. And be it further enacted, That the President of the United States be, and he is hereby authorized to establish additional land districts, and to appoint the necessary officers under existing laws, wherever he may deem the same necessary for the public convenience, in executing the provisions of this act.

SEC. 8. And be it further enacted, That the right of way for the construction of highways over public lands, not reserved for public uses, is hereby granted.

SEC. 9. And be it further enacted, That whenever, by priority of possession, rights to the water for mining, agricultural, manufacturing or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and the decisions of Courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes aforesaid is hereby acknowledged and confirmed. Provided, That whenever, after the passage of this act, any person or persons shall, in the construction of any ditch or canal, injure or damage the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage.

SEC. 10. And be it further enacted, That whenever, prior to the passage of this act, upon the lands heretofore designated as mineral lands, which have been excluded from survey and sale, there have been homesteads made by citizens of the United States, or persons who have declared their intention to become citizens, which homesteads have been made, improved and used for agricultural purposes, and upon which there have been no valuable mines of gold, silver, copper or other mineral discovered, and which are properly agricultural lands, the said settlers or owners of such homesteads shall have a right of pre-emption thereto, and shall be entitled to purchase the same at the price of \$25 per acre, and in quantity not to exceed one hundred and sixty acres; or said parties may avail themselves of the provisions of the act of Congress, approved May 20, 1862, entitled "An Act to secure homesteads to actual settlers on the public domain," and acts amendatory thereof.

SEC. 11. And be it further enacted, That upon the survey of lands aforesaid, the Secretary of the Interior may designate and set apart such portions of the said lands as are clearly agricultural lands, which lands shall thereafter be subject to pre-emption and sale as other public lands of the United States, and subject to all the laws and regulations applicable to the same.

Passed July, 1866.

### Our Patent Agency.

The Patent Agency of the Mining and Scientific Press has been signalized with remarkable success during the past two years. The importance to the inventive genius of this coast of a thorough and reliable agency for the solicitation of Letters Patent from the United States and foreign Governments cannot be over-rated, and the Proprietors of the Press, feeling the responsibility which rests upon them, and the reward which must follow the faithful performance of their trusts, will take care to afford inventors every advantage to be secured to them through a competent and responsible agency upon this coast.

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THIS COMPANY, HAVING GREATLY ENLARGED their Refining Works, and introduced many other important improvements, are pleased to announce that they feel warranted in again reducing materially their terms of doing business.

### The Tariff of Charges

Which they now submit to the public—considered with reference to the cost of material and labor—is lower than in any other part of the world, and secures to the mining interest of this coast an important increase in both the mining and commercial value of bullion. Their charges hereafter will be as follows:

### For Assaying Deposits for Unparted Gold Bars.

One-eighth of one per cent. (heretofore a quarter) for all amounts over \$1,600, and two dollars for any smaller sum. Returns made in twenty-four hours.

### For Assaying Deposits for Unparted Silver Bars.

Two dollars for the gold contained, up to \$1,600, and one-eighth of one per cent. for all amounts over that sum, and one per cent. on the silver contained. Returns made in twenty-four hours.

### For Refining Deposits made for Coin or Fine Bars.

On bullion under 300 parts gold, 2 cents per ounce.  
On bullion from 300 1/2 to 600 parts gold, 4 cents per ounce.  
On bullion from 600 1/2 to 750 parts gold, 6 cents per ounce.  
On bullion from 750 1/2 to 930 parts gold, 8 cents per ounce.  
Above 930, the only charge will be for coinage. But there will be no charge for refining less than two dollars.

### For Coining Gold.

This charge will be the same as at the Mint—a half of one per cent.—and which is paid by us to that Institution. But there will be no charge in future for making fine gold and silver bars from bullion refined by us.

### Returns in Coin made in Forty-eight Hours.

Silver contained in deposits for coin will be accounted for at the same rate customary at the Mint.

Gold bars of other Assayers in good standing, will be cashed by us at the highest market rates.

Dust and bullion can be forwarded to us from any part of the country, and returns made through Wells, Fargo & Co's Express.

### Charges at the U. S. Branch Mint.

For the convenience of those not familiar with the terms of the Mint, we subjoin the tariff of charges now in force at that Institution:

For refining bullion under 300 parts gold, 3 cents per ounce.

For refining bullion from 300 1/2 to 600 parts gold, 5 cents per ounce.

For refining bullion from 600 1/2 to 750 parts gold, 7 cents per ounce.

For refining bullion from 750 1/2 to 930 parts gold, 11 cents per ounce.

For refining bullion from 930 1/2 to 999 1/2 parts gold, 14 cents per ounce.

The charge for coinage is a half of one per cent., and the charge for making fine silver bars, the same.

Comparing the net value of deposits for coinage, with the proceeds of unparted gold bars sold in the market—assuming that the bars have cost 3/4 of one per cent—they must be sold at the following par rates to equal the return which would have been made had they been deposited for coinage.

830 par to equal Mint return, at refining charge of 14 cents.

845 par to equal Mint return, at refining charge of 11 cents.

865 par to equal San Francisco A. & R. Works return, at refining charge of 8 cents. 8v14f

## SAN FRANCISCO

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### Endorsement by the Miners' State Convention

The following resolution was adopted by the California Miners' State Convention, held at Sacramento, Jan. 17th, 1866:

Resolved, That we regard a mining paper or journal of great importance to the mining interest of California, and we recommend the MINING AND SCIENTIFIC PRESS, of San Francisco, to the consideration and support of the miners of the Pacific coast.

## W. T. GARRATT, City

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Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles, HYDRAULIC PIPES AND NOZZLES

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal." Highest Market price paid for OLD BELLS, COPPER AND BRASS. 6v1f

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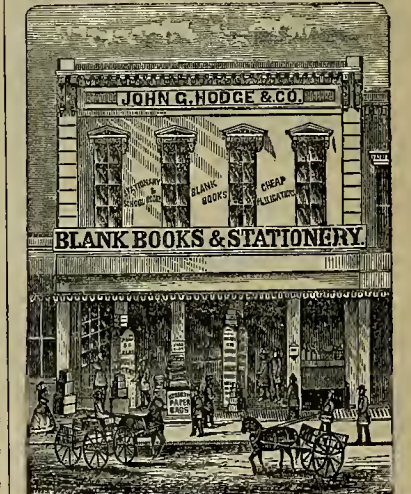
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SAN FRANCISCO, SATURDAY, MARCH 2, 1867.

VOLUME XIV.  
Number 9.

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## A New Mineral—Hubnerite.

In our issue of Sept. 29th, 1866, we acknowledged the reception of a collection of specimens from Mr. A. H. Howk, of Weston, Nyo county, Nevada, among which we noticed one as "evidently a tungstate—probably of iron and manganese." We subsequently submitted the mineral to Prof. Blake, who, upon a preliminary examination, reported the following, in connection with other mineralogical notices, to the California Academy of Natural Sciences:

**Tungstate of Manganese.**—I have received from Mr. Ewer, fragments of a mineral from Nevada, which appears to be tungstate of manganese. It is in radiating prismatic crystals; color dark olive green; high specific gravity, and before the blowpipe gives the reactions of tungstic acid and of manganese.

Silliman's *Journal of Science*, for January, in copying the above, thinks the mineral is the same as that referred to below as a new mineral. Both, it will be seen, are from Central Nevada, and possibly from the same locality. We again copy from the *Journal of Science*:

**Hubnerite, a new mineral.**—E. Riotte has described, in the *Reese River Revue*, a new tungstate of manganese, entirely free from iron, found in the Erie and Enterprise veins in Monmouth district, Nevada. From a notice of Riotte's paper by H. Credner, in *Berg. und Huttenmännisches Zeitung*, we take the following:—Crystallization trimetric,  $I: L=105^\circ$ ; generally in columnar masses or foliated, imbedded in quartz. Cleavage brachydiagonal, very perfect. Fracture, uneven.  $H=4.5$ .  $G=7.9$ . Color brownish red to brownish black. Streak yellowish brown. Luster adamantine on the cleavage plane, and otherwise greasy. Translucent to opaque. Analysis by Riotte and Hubner gave,  $WO_3$  76.4,  $MnO$  23.4. B.B. gives reactions for both tungstic acid and manganese. Partially soluble in chlorhydric acid, leaving a yellow residue almost completely soluble in ammonia. Hubnerite is, according to Dr. Adelberg, found in both of the localities in a vein three to four feet wide in a metamorphic clay-slate, and is associated with scheelite, fluor-spar and apatite. A later article by Breithaupt, in the same journal, questions the correctness of the crystallographic measurements, and gives the density as 7.14.

**Slow.**—A message sent by the Atlantic Cable travels only a little over six thousand miles in a second, while a message sent by a land line, travels sixteen thousand.

## Our Steam Navy.

The *London Engineer*, of a recent date, contains a very pointed, just and well written critique on the lack of efficiency manifested by our Governmental Bureau of Naval Steam Engineering. This department, it will be recollected, is under the direction of Mr. Isherwood, as chief engineer. Almost or quite the entire of the scientific and intelligent commercial press of our own country, which has referred to the subject at all, fully agrees with our English contemporary, that there is a most manifest need of improvement in this direction; and that the danger is imminent that our new navy will be most seriously impaired by the defective nature of the steam machinery with which it is being supplied. In fact, the damage is already upon us; and the wonder is that the government is not aroused to action, in view of the almost united testimony of the scientific and practical engineers of the country, against the principle of construction adopted and persisted in by the chief engineer.

Mr. Isherwood does not believe in working steam expansively: hence his cylinders are small, and his boilers large. As an illustration of the lack of efficiency involved in his theory, the machinery of the unarmored frigate Franklin is particularly alluded to. This is one of the government vessels, built with great strength to carry enormous guns, and which should be prepared to attain a high rate of speed, to protect our commerce from such piratical craft as the *Alabama*, etc. Her boilers and machinery have been designed after Mr. Isherwood's peculiar notions, in accordance with which all he can promise is ten miles an hour! Good engineers say he never will realize even that. Her cylinders are, out of all manner of proportion, too small for her boilers; because the principle he adopts requires such a construction—even though it be at the expense of speed. He is equally at fault with experience, in giving too large bearing surfaces to his journals, by which unnecessary friction is engendered, and consequent binding and cutting of both journals and bearings.

At the trial trip of the Franklin, only twenty revolutions could be got from her engines, in consequence of her journals becoming heated from the above cause, when she ought to have run up to double that number. Of what value would such a vessel be in acting the part of police of the seas, where speed is the chief essential? But still Mr. Isherwood, it is said, clings to his own notions in manifest and utter disregard of the teachings of both science and practice.

It is much to be regretted that our gallant navy, manned by the best crews that ever sailed a ship or stood by a gun; built after the most approved models and furnished with the most efficient weapons of attack and defence, should be rendered altogether inefficient by the headstrong notions of a single individual. All the progressive ideas of the age have been brought to bear in the

construction and armament of our national navy, until both ships and guns have become almost new creations. But the motive power, by which all this enginery of war is propelled, stands where it did twenty years ago; before necessity proved itself such a prolific mother of invention. So long as an enemy can be kept within pounding distance, our gallant heroes care but little for Mr. Isherwood's slow machinery; but when it becomes necessary to chase him through wide ocean wastes, it is bitter and galling in the extreme to see him escape with light heels, in consequence of the antiquated ideas on which our propelling power is modeled. These may be unpleasant facts to acknowledge; but from what we can gather from the controversy on this subject, they appear to be well sustained. It is possible that the engineer may be himself so hampered by the everlasting red tape system, that the fault should rest on other shoulders. It is, however, time the public were informed as to who is responsible for the abuse of ignoring principles which not only bear the test of untrammelled scientific investigation, but which have been moreover daily verified by actual practice, in various parts of the world, for more than a decade.

**MECHANICS' INSTITUTE.**—The annual election of this association will take place at their new rooms, on Post street, above Montgomery, on Monday next, March 4th. The work of moving into these rooms is already commenced. The following are the regular nominations: President, Henry K. Gluyas, Vice President, J. M. Eckfeldt; Treasurer, Thomas Young; Recording Secretary, D. E. Hayes; Corresponding Secretary, Horace D. Dunu; Directors, Joseph McGill, Hiram Rosekrans, George T. Bohlen, James Spiers, C. H. Harrison, Samuel Tyler and W. C. Pease.

At an adjourned meeting of members, held on Thursday evening last, an opposition ticket was presented. It is as follows: For President, D. A. MacDonald; Vice President, A. C. Austin; Treasurer, W. H. Davis; Recording Secretary, J. H. Culver; Corresponding Secretary, W. F. Herrick; Directors, Gardiner Elliot, John C. Sheldon, R. S. Eels, William Corcoran, C. T. Tilden, Samuel Smith, J. B. Johnson. It is expected that there will be a spirited contest.

A resolution was passed at the meeting of February 21st, instructing the Corresponding Secretary and President to communicate with Prof. Agassiz, with a view of inducing him to visit California, and deliver a course of lectures before the Institute.

**THE DARIEN CANAL.**—Senator Conness has secured the passage of a resolution instructing the Secretary of State to obtain from the Colombian Government authority for a survey for a ship canal across the Isthmus of Darien, and to ascertain the terms upon which the right of way can be obtained. It has been estimated that the value of the Darien Ship Canal to California alone would be equal to an addition of \$100,000,000 to her taxable property within ten years.

## Golden City Chemical Works.

We mentioned this new corporation in our last, giving the names of the incorporators, and stating the object of the association. It is one of the most important enterprises of the day. Immense quantities of sulphuric and nitric acids are used on this coast, and will continue to be used so long as our mines yield the precious metals, and the assayers' profession is practised. But as these articles are of a dangerous character, as regards transportation, ship owners are unwilling to take them in charge, except at such high rates of freight and insurance, that they cost here about double their value at the manufactory. If, therefore, any commodity should be manufactured here, these should. The Golden City Works will, for the present, devote attention especially to the making of these acids. Their arrangements for the purpose are the most complete of any on this continent. The cost, up to this time, has been not less than \$250,000, and the incorporators are among the millionaires of the State. All the modern improvements have been adopted without regard to expenso. An English foreman of experience has been imported. H. P. Wakelee is the chemist and superintendent. A large amount of material is already stored in the warehouses of the company. One thousand tons of nitrate of soda, worth, say eighty dollars per ton, and five hundred tons of sulphur, worth sixty-five dollars per ton, are now on hand. Both were imported—the former from Peru, and the latter from Sicily. As regards sulphur, however, there will in future be a supply from our own State, and there is reason to believe that nitrate of soda, also, will ere long be found here in sufficient quantity to make us independent of other markets. The company has already on hand some two hundred tons of acid. Of this, one-half is in carboys, the balance in the chambers, for want of carboys to contain it. Three thousand of these are ordered from the Pacific Glass Works, which will be furnished as soon as they can be turned out.

The capacity of the apparatus is about ten tons per day of sulphuric acid, and one ton and a half of nitric. The company has a contract with the Mint for three years. They can and do furnish acids at the same price as that paid by the Philadelphia Mint to the manufacturers of that city.

The arrangement of the works are such as to admit of enlargement, from time to time, as the demand for any other chemicals increases on this coast. It is the intention to manufacture any and everything in that line that can be required in quantity.

**COUNTERFEIT QUARTERS** are in circulation which, from their general appearance, are calculated to deceive the public. The ring of the pieces is clear and sharp; but they blacken readily on the application of a neutral solution of urate of silver. They contain no silver, being composed of copper, nickel and zinc. So far as observed, they are all dated 1854, and have the letter "S" under the eagle.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## What is a Practical Chemist?

BY E. PIQUE.

This question is rather difficult to answer, as a man can be practical in one or several branches of chemistry, and not practical in many others. Some people imagine that a practical chemist is one that knows every thing; but such a person does not exist. Our life is too short, and the capacity of mind too limited, to allow one single man to have practical experience in all the branches of such an extensive field as chemistry; and this truth must be acknowledged by every man who realizes what an immense number of operations are included in this science, and how vastly different one is from the other. So, for instance, one man might be able to extract metals from ores, and the same man could not, perhaps, make a barrel of good beer; or, a man might be a good sugar refiner, and the same man could not dye cotton or silk properly; or a man might be able to analyze any kind of mineral, and determine with accuracy the elements of which it might be composed, and still be unable to tan the hide of an ox or a calf to perfection. And so there are many thousands of different chemical operations requiring quite different practical experience.

But what I designed particularly to allude to, is the view of some people, who imagine a practical chemist to be only a man that has worked with large furnaces, large pans, large vats, etc.; and further, that a man might be able to do something on a small scale, and still be unable to do the very same thing with large quantities. My opinion is, that a man may have worked with ever so large quantities and still be an ignorant fool. I have worked in many chemical branches, with small and with large quantities, and I can positively affirm that anything that will work on a small scale must also work on a large scale. I have tried it with a great many things, and have always found the same action to take place, whether I worked with an ounce or with a ton. Is there any sensible reason for the contrary? If one ounce of copper will dissolve in three ounces of sulphuric acid, why should one ton of copper not dissolve in three tons of the same acid? Or if one ounce of chlorine gas will precipitate about three ounces of silver from its solution, and produce four ounces of chloride of silver, why should one ton of chlorine gas not have the same effect on three tons of silver?

This point being settled beyond a doubt, by plain common sense, as likewise by my own and other people's experience, I must still confess that sometimes a thing that works well on a small scale, does not seem to give a favorable result when operated on in large quantities. The reason of this apparent contradiction lies in the fact that in working on a large scale, we do not use the same kind of tools and vessels as we do in small experiments. On this very important point whole volumes could be written; but for the benefit of beginners, I will state only a few items. In experimenting, for instance, in the humid way, on a small scale, we generally use glass vessels, because glass is transparent, so that we can watch the changes that take place very precisely, while at the same time good glass resists the action of alkaline solutions, and of all the acids—whether concentrated or diluted, whether cold or boiling hot (with the exception of fluorine acid).

Now, in working on a large scale, glass is an article which should be used only when nothing else will answer, for the reason that glass is liable to be cracked or broken, and that glass vessels can only be procured of limited dimensions, not exceeding a few gallons, while durable metal or wooden vessels can be had of any capacity desired. Therefore, in transferring a small experiment to a chemical operation, on a large scale, we

must first consider whether metal or wooden vessels would not do to work in. Among the metals, we are generally limited to the choice of iron, copper, lead and platinum.

1. *Iron vessels* will answer the best of all in dealing with alkaline solutions. Acids of whatever kind, whether weak or strong, cannot be treated in iron vessels, because they corrode the iron. The only exception to this rule is in the case of concentrated sulphuric acid, or a mixture of concentrated nitric and sulphuric acids, of which property advantage is taken in the refining of silver and gold, by boiling the metallic alloy in cast iron vessels with concentrated sulphuric acid, which dissolves the silver and copper of the alloy, leaving the gold behind. The iron vessels do not suffer at all by this operation, and I have found them after many months use just as good as new. Neutral solutions of iron and zinc can likewise be treated in iron vessels, but not so the solutions of nearly all the other metals; since the iron being electro-positive, would precipitate them in a metallic state, and take their place in the solution, destroying the iron vessel.

2. *Copper vessels* do not answer quite so well for alkaline solutions, although they are in some cases used for them. Neutral or slightly acid solutions of copper, and all the more electro-positive metals, can be treated in copper; but certainly not any of the solutions of the more negative metals, as, for instance, gold, silver, etc., for the same reason as above. Among the acids in common use, nitric acid cannot be used in copper vessels, as this will dissolve the copper. Sulphuric and muriatic acid can be used only when diluted, but not when concentrated, for the same reason. Besides this, it has to be observed that copper is a rather delicate metal, and too strong an action of the fire will oxidize and burn it. Therefore, it is better to keep the fire at a reasonable distance, or what is still a great deal better, to introduce steam, if the contents have to be heated, as then we are in no danger of burning the bottoms of our copper vessels. In regard to economy, it must be said that copper vessels are very expensive, while iron vessels are the cheapest that can be had.

3. *Lead vessels* are the very best for working with sulphuric acid, whether diluted or concentrated. They are, therefore, used for concentrating the sulphuric acid, likewise the solutions of sulphate of copper and other sulphates. They are generally made of a single sheet of lead, which is bent into the desired shape, carefully avoiding any injury to the same. Lead vessels ought to rest on iron plates, so as to prevent their giving way, and also to moderate the immediate action of the fire. If the sheets are not very thick, the sides will also require some support. Should the lead vessels be injured, they can only be repaired by soldering the damaged part with lead, which has to be applied by a particular kind of blow-pipe. Most of the other acids cannot be used in lead vessels unless sulphuric acid be at the same time present. For instance, if we manufacture chlorine gas from peroxide of manganese and muriatic acid, the mixture would destroy the lead vessel very soon, and it would be useless to work in it; but it will stand it very well if we use a mixture of peroxide of manganese with common salt and sulphuric acid; because the latter will form an insoluble coat, which will protect the lead from the action of the muriatic acid. An excellent way of using sheet lead for certain purposes is to line wooden boxes with a continuous sheet of lead, and introduce steam into the fluid contained therein, if we intend to heat it either for the purpose of boiling or evaporating.

4. *Platinum* is a noble metal, more so than gold. It resists the action of every acid, weak or strong, cold or hot. It can only be attacked by *aqua regia*, which is a mixture of nitric and muriatic acid. For this reason it offers more advantages than all the other metals. The only drawback is its high price, which is about one-half that of gold; but still platinum vessels of a pretty good size have been used for some particular purposes.

5. *Wooden vessels* offer a great many advantages. They are cheaper than metallic ones, and can be made of any size and shape desired. They are particularly useful in operations where no artificial heat is required. Very often the mixture is heated in metal vessels, and then removed into the wooden ones, where it remains charged with a certain degree of heat for many hours; the more so, the larger the quantities of the compound are; or the mass can be heated in the wooden vessels themselves by the application of steam, which can be done in two different ways. If the object should only be to heat the contents, the steam is introduced immediately into the fluid mass. But then we have to consider that the steam in heat-

ing the water will itself be condensed, and consequently, after some time, the quantity of water in the wooden vessel will be increased for which increase a convenient space must be allowed. After the temperature of the water has been raised to the boiling point of 212° Fah., no more condensation will take place, and the steam will escape from the fluid in the same state as it enters. But should the object of the heating be to evaporate a part of the fluid, the steam must not be introduced directly; but it has to pass through metal pipes, which are in contact with the fluid, so that the steam will be condensed in those pipes, and the water so originated will have an outlet at the other end. In this case only the latent heat of the steam will act without contributing to the mass of the fluid.

Wooden vessels can be used for any fluid that is not too powerful; therefore the solutions of most of the neutral salts, diluted acids of any kind, and likewise weak alkaline solutions, can be used in them; but concentrated strong acids, and also concentrated caustic alkaline solutions, cannot be treated in wood, as they destroy the same.

Still greater difficulties will be encountered by the beginner in transferring small experiments in the dry way to operations on a large scale. For instance, little experiments on smelting are generally made in crucibles of fire-clay or black-lead. Crucibles are certainly very useful for a good many operations, even of a medium magnitude; but when it is the object to smelt many tons of a certain substance, crucibles are liable to the same objections as glass vessels are for fluids—viz., they are easily damaged, and their size is limited—we have to use a furnace. Now, the question will be, what kind of a furnace? A blast furnace is certainly the most powerful and most economical contrivance for several reasons.

The first reason is, that the fuel is in immediate contact with the material that is to be smelted, and can impart to it the heat generated much more completely than in a reverberatory furnace, where the most powerful heat naturally first strikes the arch of the furnace; and from thence, after losing a considerable quantity, is radiated down upon the matter spread on the hearth.

The second reason is, that the blast furnace does not require any hearth, which is the most trying part in building a reverberatory furnace for smelting. Neither do we want any arch, which is another very expensive part of the reverberatory furnace, as it requires the best kind of fire-bricks, and considerable bracing with iron bars, etc., and after all, having to suffer the most intense heat, does not last as long as we could wish. All these troubles and expenses are avoided in the blast furnace. The construction is cheap and simple, and, as I have said, we produce the greatest possible effect with the smallest quantity of fuel.

[To be Continued.]

## Things Worth Knowing.

Who has not observed that snow always melts faster in the traveled track, than at any other point or line in a road or street? What is the cause of its more rapid disappearance there? Trampling and "cutting up" is not sufficient of itself. It is the custom in New York and most other northern cities to pitch all the snow from the sidewalks into the middle of the streets. Streets which are but little traveled, are thus nearly blocked up with the snow, while those which are much traveled do not have enough, even in the coldest weather, and on frozen ground, to make the sleighing good. Why? There are several causes; the "cutting up" doing but little towards causing the disappearance of the snow. One great cause is the friction produced by the runners, wheels and hoofs. Friction always produces heat. Violent agitation in a close vessel will heat water; two pieces of ice rubbed smartly together will produce a sensible amount of heat.

Another great cause is the absorption of heat, by the dark colored droppings, dirt, etc., which accumulates in the traveled track. White snow melts but slowly, because it cannot absorb heat readily. Spread any dark substance upon it, such as coal dust, etc., and the snow disappears rapidly, even when the air is below the freezing point, because the dark-colored matter rapidly absorbs the heat of the sun and radiates it slowly to the snow, thereby melting it.

Prof. Seeley, in the *Scientific American* gives, as another cause, which he considers

a fact, that there is a streak of warm air up and down the middle of the streets of a city. The professor must certainly be mistaken. There must be a streak of cold air through the middle of the street. The streak of warm air would be found along the house fronts, from which warm air would ascend, and to which cold air would flow from the center of the street, leaving other and still colder air to supply its place; thus rendering the center of the street the coldest portion.

## DANGEROUS PAPER.

The Professor in his communication to the *American*, makes the following very correct remarks, which are well worth bearing in mind: "There is a great difference in the combustibility of common paper. Enamelled card paper, on account of its compact body and the presence of mineral matter, white lead or barytes, is quite disinclined to burn; in fact, some kinds are practically fire-proof. White writing and printing paper can seldom be lighted by a spark, and when ignited by a flame, it requires dexterity to keep it burning. On the other hand, there is a common reddish-yellow paper which, in some circumstances, is as dangerous as gunpowder. It takes fire by the smallest spark, and burns like tinder; when once lighted, if left alone, it is sure to be consumed completely. All the yellow and buff paper which I have tested, out of which envelopes are made, partakes more or less of the same character. I have no doubt that such paper has been the occasion of some of the fires in this city which have been otherwise explained, such as the fires in paper warehouses and offices of professional men. A spark of fire, or the stump of a lighted cigar, falling in a waste basket containing yellow envelopes with other kinds of paper, would have a good chance of setting the whole on fire."

## SPONTANEOUS COMBUSTION.

A word on spontaneous combustion may not be out of place here. Never permit cotton rags or waste of any kind, saturated with oil, to lay around: they will often ignite most unexpectedly. Such waste, when closely packed in a large heap, has been known to ignite spontaneously in three hours! The *Scientific American* is informed by a physician in New York that, having been in the habit of saving pieces of thrown-off linen garments, to be used in dressing wounds, bruises and sores, he took a handful of them one day from a drawer where the pieces were kept, and vigorously applying them to his boots, put them back where they belonged. In a few minutes afterward he saw smoke issuing from the drawer, and upon opening it found the rags in a blaze. Had he left his office before discovering the smoke, the building might have been destroyed.

Not long since, a lot of rags used in a hotel for polishing brass and silver were thrown in a heap in one corner of a room, and not long afterward they were discovered to be on fire. Had this occurred in the night, most likely the hotel would have been destroyed. It is well that such facts as these should be generally known, and always kept in remembrance. Such knowledge would doubtless save the occurrence of many "mysterious conflagrations."

**WILD RICE.**—Some 600,000 bushels of wild rice is gathered annually by the Indians of the Northwest. It generally sells for about \$1, in the fall, but often advances to \$4 and upwards in the spring. It is quite similar to the common rice when cooked, but very dark colored. It grows under water only, and on a level muck bottom. The water should be from one to two feet deep. The yield is from twenty to twenty-five bushels to the acre. We are not aware that this rice has ever been cultivated. Why has not the Agricultural Bureau at Washington tried it? It is said they have not done so. This would seem to be just one of the things which that department should look after, and experiment upon.

**AN ARCH OF IRON AND COAL.**—When Queen Victoria made her recent visit to Wolverhampton, England, to dedicate the statue to Prince Albert, her cortege passed under six triumphal arches on their way through the principal street. The chief of these arches was one of iron and coal, being hewn into blocks weighing two tons each. There was also an arch composed of hardware and japanned goods, among which coal scuttles were quite conspicuous.



## Mechanical.

## Improvements in Steam Boilers.

Considerable attention has been directed of late to improvements in the manufacture of steam boilers. In these improvements two objects have been chiefly kept in view. First, to secure the largest amount of heating surface, combined with the greatest facility for the transmission of heat from the furnace to the water in the boiler. This object is sought to be obtained in the method of arrangement of tubes and flues, and in employing the least thickness of metal compatible with safety. A large amount of heat is lost by employing ordinary boiler iron, rather than steel, which latter being stronger, may be used much thinner than the former. Steel and copper would come into general use in preference to iron, were it not for the increased cost of those materials. The hope is entertained that improvements in the manufacture and manipulation of the former may soon render economical its general introduction in the manufacture of boilers.

Steel has already been employed for locomotive boilers with considerable success. Sixteen cast steel locomotive boilers were manufactured during the first six months of 1865, for an Australian railway company. All the tests applied to these boilers have given most satisfactory results, so much so that nine additional boilers were immediately ordered. Six old locomotives on the same road, have also been supplied with new boilers of steel, and orders have been given for the construction of sixteen more.

The second object in view in the way of improvements is additional security from accidents. Corrosion is the prolific source of deterioration and danger in steam boilers; and the greatest amount of such action, generally occurs along the edge of the inside lap of riveted joints. This action is supposed to occur at that locality in consequence of the alternate expansion and contraction of the joints, by which the corrosive scale is almost daily removed, presenting new surfaces of iron to the action of the water until the joints are so much weakened as to give way. The punching required in forming joints, by taking away a large portion of the iron, and seriously disturbing the molecular structure of that which remains, adds still further to the weakness of boilers at their joints. Hence, boilers almost always give way at such connections, and rarely or never in the center of a plate; unless previously weakened by burning. Carelessness in hammering at the rivets, and in chipping the edges of the plate in the progress of construction, by which the *skin* of the iron is always more or less broken at the joints, is also another fruitful source of weakness and danger, inseparably connected with jointed boilers.

In order to remedy these difficulties, extensive experiments are now being made in the construction of boilers with *welded* instead of riveted joints. The Midland Railway Company in England are now building all their boilers on this plan. The plates are rolled with thickened edges, the ordinary thickness of seven-sixteenths of an inch being preserved in the body of the plate and the edges being thickened to five-eighths of an inch; the taper being gradual and extending from the edge back to about four inches. The longitudinal seams of each cylinder of the boiler iron is a lap weld, and the edges of the cylinders are squared up in a lathe, making flush joints, which are covered with welded hoops double riveted. Machinery not essentially different from that in ordinary use is employed to bend the plate, and the welding is accomplished by means of a crane and a curved anvil face, the convexity of which corresponds to the diameter of the barrel. A welding heat is taken on a portion of the seam, the edges of the plates being scarfed down, and the weld is perfected by repeated heatings of successive portions of the joint.

**STEEL HARDENING BY USE.**—It is a fact well known to locomotive engineers, that steel tires, after they have been some time in use, become much harder on their bearing surfaces than when originally turned out. A hard skin is formed on them which it is very difficult to remove by turning. This is more especially the case on those wheels which are more than others subjected to the action of the brake-blocks. When such wheels require re-turning, it is often found necessary to break up this hard skin by means of a hammer having a blunt cutting-face. The cuts or breaks made by the hammer allow the turning tool to get a hold under the skin, and so do its work. Of course the process of turning such wheels is a very slow one. This difficulty has led to the devising of grinding machines, to take the place of the lathe. The grinding stones are run at great speed, while the wheels which are being ground are made to run against the face of the stones in an opposite direction. The stones are so hung as to be readily moved up to, or drawn back, like the tools of a lathe. These tire-grinding machines are now being quite generally adopted throughout all the English railway repair shops, and are said to finish up their work as nicely, and with as much precision as the lathe. This hardening is noticed only on steel tires.

**FRICTION WHEELS** are being introduced into manufacturing operations at the East, instead of gearing. Beveled frictional wheels for changing the line of motion are also used, and cast just like the ordinary beveled gears, only lacking the cogs—they may be called beveled gear blanks. The face of one is turned and polished, while that of the other is covered with oak-tanned sole leather, soaked and pressed to form. In setting up such wheels, the driver should always be the one covered with leather; then, if the driver continued to revolve, while the driven remained stationary, the wear of the leather would be uniform. The uneven wear of the leather by an opposite arrangement, may be readily conceived. Frictional wheels are used almost entirely in the hoisting works at the mines, both on this coast and in England. This substitute for cog wheels is said, by the *Scientific American*, to work in a very satisfactory manner, doing its work noiselessly, with less frictional wear and tear, while it is less liable to get out of order. Friction wheels are deserving of more consideration than has heretofore been awarded to them.

**UTILIZATION OF ZINC WASTE.**—During the operation of smelting zinc, a large portion of the metal escapes in the form of vapor, consisting of finely divided metallic zinc. This vapor is known as "zinc fume." When it is cooled, it is deposited as fine as dust on every projecting part of the smelting works. A European manufacturer has recently proposed to utilize this substance, by grinding it with varnish, and applying it to iron as a preservative against rust. The principle of the operation is the same as that of galvanizing, but the zinc is applied in a different manner.

**QUANTITY OF WATER FOR STEAM.**—Careful observations show that it requires about forty-five gallons of water to drive a locomotive and train one mile, under full headway. One gallon will drive it about 115 feet only. It requires one pint for every turn of the driving-wheel; half a pint of water is ejected with every puff of steam.

THERE are thirty iron manufacturing in Chicago, several of which are almost exclusively engaged in preparing railroad iron, and together do a business amounting to \$2,500,000 per annum.

INVENTORS should ever bear in mind that the time employed in the elucidation of an invention is never wasted. The fruit may be long ripening, but, when ready to pluck, it will not prove defective.

## Scientific Miscellany.

## A Volcano in the Moon?

One of the well known volcanic craters in the moon, is said to have recently presented some unusual phenomena, which can be explained only on the supposition that this extinct crater has once more become active. This crater is the one known by the designation of "Linnie," located on the *Mare Serenitatis*. It was noticed by an astronomer at Athens, a M. Schmidt, during the months of October and November, to be obscured. English photographs taken during the same time show the crater very faintly marked. The same darkness was observed on this spot by the eminent astronomer Schroeter in November, 1788. The *London Spectator* says:

"The impression is that an eruption is going on? but if so, must not the moon have an atmosphere? Could combustion take place without oxygen? Would the smoke—the carbonic acid gas—rise without some heavier gas, like atmospheric air, to rise in?"

It is generally conceded that there is no atmosphere, or at most, but a very attenuated one surrounding the moon. This theory, however, does not militate against the supposition that there may be an amount of oxygen, quite sufficient to support combustion, within the mass of the moon. The now generally received theory is that the moon, in the process of cooling and contraction, has absorbed not only its oceans and all other waters, but its atmosphere as well, or nearly all of the latter. If such be the case, an abundance of oxygen may be found in the crevices and caverns of that orb to support combustion in its volcanoes, even if there should be a deficiency of that element at and near its surface.

**DETERMINING LONGITUDE BY TELEGRAPH.** A particular account of the late interesting operations, of determining the difference of longitude between the Observatory at Greenwich, England, and at the National Observatory at Washington, was to have been read at the late meeting of the National Academy of Sciences, by Dr. B. A. Gould, under whose direction the work was executed. Dr. Gould occupied the Ocean Cable Station at Valentia, Ireland, while the English Astronomer, Royal, gave his co-operation at Greenwich. The results are said to show an unexpectedly close agreement between the now exactly ascertained figures, and the astronomical calculations which had been previously relied on. The free use of both cables was tendered for the purpose. The same class of experiments will soon be made through the Overland telegraph, to fix the exact longitude of San Francisco. The signals transmitted during the operations are said to have possessed more sharpness than had been anticipated, and the time of transmission was remarkably constant.

**BREAD POISONED BY FUEL.**—The discovery has been accidentally made at Cologne, that the bread made in that city often contains lead, zinc, copper and baryta. It was at first supposed that these minerals were mixed with the flour by the flour dealers. An analysis of the flour itself, however, showed that such was not the case. After various efforts to discover the source of the poisonous ingredients, it was finally traced to the *fuel*. The coal and ashes was found in several instances to be highly charged with oxide of lead, zinc, etc., obtained from the combustion of painted boards and other old refuse timber and stuff, such as is often purchased by bakers for fuel, on account of its superior heating qualities. The oxides found in the ashes came from the paints, with which more or less of this wood was covered. These oxides would be deposited on the bottom of the oven.

**LARGE POTATOES MOST NUTRITIOUS.**—Potatoes two inches in diameter contain 17.2 per cent. of nutritive value; those less than one inch but 14.6 per cent. Full growth is requisite for a full development of their nutritive power.

**A NEW AND CHEAP ACTINIO LIGHT.**—It is said that twenty-four parts of nitrate of potash, seven of flour of sulphur, and seven of red sulphuret of arsenic, thoroughly ground together, will make an artificial light of high actinic power, and well calculated for producing photographic pictures. It is, moreover, an economical light, as 400 grammes of the compound, in burning, will make a light lasting one minute, at a cost—New York prices—of three cents. The same intensity of light for magnesium will cost about twenty-five cents.

**PRESERVATION OF MILK.**—It is said that after milk has been boiled under a pressure of about twenty-two pounds to the inch, it may be preserved for an indefinite length of time in air-tight cans. The germs of fermentation cannot be destroyed by ordinary boiling in the open atmosphere; they require the heat due to the above pressure.

**A NEW COMPOUND.**—E. Sichel has formed a new compound, which he calls "elycone-nine." It is made by mixing four parts of yolk of eggs and five parts of pure glycerine in a mortar. The mass has the consistency of honey, and is unctuous like fat bodies. It has remained unaltered by an exposure to the air for three years. Applied to the skin, it forms a varnish impervious to the air.

**LIGHT OF THE SUN.**—The best idea of the intensity of the light of the sun may be inferred from the fact that the most brilliant light which can be artificially produced, when held between the eye and the sun, looks like a dark, black spot—so much more brilliant is the latter.

**A NEW SUBSTANCE.**—At the last meeting of the Academy of Science, in Paris, M. Niklès, professor of chemistry at Nancy, announced that he had succeeded in obtaining perchloride of lead, a curious substance derived from the only compound of lead and chlorine, and which must now be called protochloride. The latter is obtained directly by subjecting lead to the influence of chlorine by the application of heat, or else by treating litharge with hydrochloric acid. It crystallizes in needles, is volatile, and cannot be decomposed by heat. M. Niklès has obtained the new compound by exposing protochloride to the action of a current of chloride in a solution of chloride of lime. The perchloride thus obtained is a yellow liquid, emitting a strong smell of chlorine, and is a powerful agent for communicating that element to other substances. It will dissolve gold, and produces, with aniline and the analogous compounds, those beautiful colors for which those substances are so remarkable. With morphine it yields a color similar to that of the horizon at sunrise; and with brucine a rich cherry red. It will carbonize cane sugar and not glucose, and blacken aniline without producing any effect either on fecula, starch or dextrine.

**A CURIOUS EFFECT.**—Gernez has lately found that many substances which after being fused still retain their liquid form until their temperature has been considerably lowered, are nevertheless solidified while their temperature at the same time rises again to the melting point, either by contact with a particle of the same substance, or of another which has touched it, or by friction of two solid bodies within the fused mass. Phosphorus and sulphur are examples, either of which will instantly commence to crystallize at the point of contact with a particle of their own kind, or with glass which has been touched with the same, or with two bits of glass shaken together, within the melted substance; the crystallization spreading rapidly throughout the mass.

**COFFEE GAS.**—If ground coffee be mixed with cold water, a gas is evoked about equal in volume to the coffee; and if mixed in a closed bottle, filling it, the gas will burst the receptacle. M. Babinet, who observed the fact, does not mention the composition or properties of the gas. Will some of our chemists examine it?

A MASS of iron weighing 1,000 pounds at the equator, would weigh 1,005 pounds at the poles, and but 500 pounds at a distance of 2,000 miles below or 1,650 miles above the earth's surface, and only 160 pounds on the moon. On the planet Jupiter, however, its weight would be increased to 2,600 pounds; while placed on the sun it would gain 27,000 pounds.



**IS SODIUM AMALGAM DANGEROUS?**—We thought this question was settled negatively long ago; but it seems that some of our contemporaries are still very much alarmed about a *spurious* sodium amalgam, which, according to a New York paper, is being extensively sold in this State, and which is described as a "dangerous compound." Our mining friends need entertain no fear whatever from anything of the kind, for there is no possible compound of sodium and quicksilver which can be made explosive, or which may not be taken, in any quantity, in the hand, and held under water with the most perfect safety. The story about a quantity of sodium amalgam being sent to New York for analysis, containing a large quantity of oil, etc., is no doubt correct, for it is kept in oil (coal oil) to preserve it! The oil is no injury to it. We can assure our contemporary, the N. Y. *Mining Journal*, which first started this story, that the sodium amalgam manufacturers in California have not "bungled" at all; the bungling has been done by the writer of the article in question. What he says about the *metal* sodium, however, is correct. It should not be used by persons who are not well acquainted with its nature. What he says about sodium *amalgam* is all wrong, and has no foundation in fact.

**NATIONAL INSURANCE COMPANY.**—This organization held a meeting, on February 25th, to vote upon the question of disincorporating. The decision was against it. Only 3,454 votes were recorded in favor of the proposition, whereas 6,667 were necessary to carry it. Mr. S. P. Dewey, the original mover of the proposition, then offered a resolution that the action be declared unanimous, and that all pledge themselves to use their best endeavors to promote the future interests of the Company. This was carried, and the best feeling prevailed. We are glad that this Company has taken this action. We consider it one of the soundest and most reliable, of this class of institutions, in the State.

**MINING INVENTIONS, ETC.**—It is said that during the year 1865, the number of patents issued for inventions relating to the mining, metallurgical and mineral arts, number two hundred and two. The same class of inventions for 1866, undoubtedly outnumbered those of the previous year. Let us hope that this sign of prosperity and progress, in such an important direction, may still continue to improve. Another hopeful sign of our progress as a nation, in the mechanic arts, is the fact that during the past year \$133,000 were deposited in the Treasury by the Patent Office, after paying all the expenses of the office. This makes the total amount now to the credit of the Patent Office nearly \$300,000.

**FIRE AT THE MINERS' FOUNDRY.**—On Saturday night last, a fire occurred in the pattern shop of the Miners' Foundry, which destroyed most of its contents. The owners, Messrs. Howland, Angell & King, were insured to the amount of \$18,000, and they estimate the damage as fully that amount. Patterns constitute an important part of the material of a foundry, and they can only be replaced at the expense of much time and money. The origin of the fire is unknown, but it is believed to have been the work of an incendiary.

**LEAD IN ILLINOIS.**—It is said that a portion of the southern part of Illinois, near the Ohio river, appears to be filled with lead veins thirty to fifty yards apart, and yielding ore in paying quantities. These veins begin about thirty feet below the surface, and have been traced down to the depth of 1,600 feet, becoming richer the deeper they descend.

**PATENT REPORTS.**—We acknowledge the receipt from T. C. Theaker, U. S. Patent Commissioner, of a copy of the Patent Reports for 1862.

**KILLED BY SNOW.**—We learn with deep regret of the death of Mr. Geo. N. McCain, a most estimable citizen of Potosi, near Howland Flat, Sierra county. Mr. McCain was foreman of the Hawkeye Company, and on the 20th ult., while passing along the sluices in the ravine, he was caught by a slide and buried about six feet deep in the snow. His fellow workmen soon found his lifeless body. Deceased was a native of Pennsylvania. He leaves a wife and one child. Our informant states that a terrible storm was raging at the time of the accident, and people found it difficult to visit their nearest neighbors without the aid of snow shoes.

**STANDARD SOAP.**—One of the indispensable necessities in every house is soap; and it is a matter of no little interest and economy, that a good article should be used. Those who are well posted, assure us that no soap for general household purposes, can excel that furnished by the Standard Soap Company, at 207 Commercial street. They also prepare a washing powder, especially adapted for washing and cleaning linen, etc. One great convenience attending this powder is the fact that it works equally well with hard or soft water. Both the powder and soap may be obtained of the grocers generally.

**HYDRAULIC WHEEL.**—George O'Neal, of Dutch Flat, has filed a caveat for a new water wheel invented by him, called the "Hydraulic Wheel." The Dutch Flat *Enquirer* says it is designed principally for mining purposes, and can be made of any size. The buckets receive a stream of water from a nozzle from one-half an inch to three inches in diameter. The wheel can be placed in either a vertical or horizontal position, and the stream can be directed against either the bottom or the top.

**CALIFORNIA PACIFIC RAILROAD.**—The *Vallejo Recorder* says: The road is all under contract from Vallejo to Sacramento. The iron, engines and cars have all been shipped from New York, and will arrive at Vallejo in June. The first seven miles, forming the junction with the Napa Valley road, will be completed and in operation by the first of August at farthest, and the road will be in working order to Sacramento by November of this year. The distance from Vallejo to Sacramento is sixty miles.

**THE INDUSTRIAL MAGAZINE.**—We have received the February number of this periodical, a new monthly of forty-eight pages, published in this city. It is very neatly got up. It professes to advocate "all measures and movements having in view the general good and substantial advancement of the working people—mechanics, miners, farmers, and working men and women of all occupations."

[Special Notice.]

**PERRY DAVIS' PAIN KILLER.**—We have often spoken of this great medicine in terms of very high praise, and we have as often felt that all we could say in its favor would not do it full justice. It is one of those medicines of which we can speak—and speak decisively—from experience; for we have repeatedly taken it, and invariably with the best results and the greatest satisfaction. We always keep it on hand, ready for any emergency, and we regard it not only as one of the best and most reliable of medicines in use for various ills, but as one of the cheapest, also. Its cost, by the way—that is the cost of all the ingredients of which it is composed—has been considerably increased, but the price of the medicine has been but very little advanced. It is not likely that the popularity of Davis' Pain Killer will in any measure decrease, or that the demand for it will in the slightest degree decline, until some other specific for allaying pain and curing the various complaints for which it is so generally used, shall be discovered, of equal potency with it—of which there seems to be little probability. As a remedy for stomach complaints, such as dysentery, diarrhoea, &c., the Pain Killer is without doubt unsurpassed, and everywhere most deservedly in demand. One, two or three doses, of a teaspoonful each, in a wine glass of milk and water, with a little sugar, have repeatedly, within our knowledge, effectually cured serious trouble of this kind. Judgment should undoubtedly be used in not checking certain stages of diarrhoea too suddenly; but taken at the proper time, the Pain Killer will act like a charm, and frequently cure when nothing else will. *Providence Advertiser.*

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.  
SAN FRANCISCO, SATURDAY MORNING,  
March 2, 1867.

### MONEY MARKET.

The money market has been quite apathetic since our last reference, owing to the inactivity in business circles and other well known causes. There is no variation in the rates of interest for Bank accommodations, which remain at 1@1½ per cent. per month; but unemployed funds continue to accumulate, and a tendency to greater ease is quite apparent.

The *Mercantile Gazette*, of the 27th ult., has the following in regard to the sale of drafts on the East by the Sub-Treasurer in this city: "No transfer orders of the Register of the Treasury at Washington upon the Assistant Treasurer in New York have been on the market recently, the Sub-Treasury in this city not requiring funds for immediate disbursement. The excess of Federal expenditures over receipts in Greenbacks on this coast the past year amounted to nearly \$4,000,000, and the sale of these drafts or orders has greatly facilitated the payment of this indebtedness. The books of the Sub-Treasurer here contain the names of several hundred parties, who have availed themselves of the privilege of exchanging their Greenbacks for these orders or drafts, and during the past few months \$1,500,000 have been disposed of in this way. We are informed that no telegraphic orders or transfers, payable in the East or elsewhere, have ever been issued from the office of the Sub-Treasurer in San Francisco."

The receipts of Treasure from the interior mining districts have of late been unusually light, and for the entire month of February amounted to less than \$2,500,000. In no previous month within the past year have the receipts been as inconsiderable. Our exports of Treasure for the same period have also been very small, amounting to only \$2,750,000.

Bullion was in active request for shipping purposes, and Gold bars have been sold as high as \$70@80; and Silver ruled at 1@1½ per cent. premium.

### CITY STOCKS.

At a meeting of the stockholders of the National Insurance Company, held on the 25th ult., a proposition to wind up its affairs was lost by a majority of the votes represented. A resolution was then unanimously adopted, pledging the united efforts of the members to secure the success of the company. Some 200 shares of this stock have been sold during the week, within a range of \$73.25@72. San Francisco Gas stock continued to be sold at enhanced rates, advancing to \$70 per share, at which figure considerable transactions have taken place. The consumption of gas in this city is larger, perhaps, than is generally supposed, and during the past year the San Francisco Gas Company supplied their customers with 118,333,365 feet, which at \$6 per 1,000 feet amounts to \$710,000. This company disbursed its usual monthly dividend yesterday.

### MINING SHARE MARKET.

The mining share market for the most part has been tolerably well maintained, and transactions have been quite numerous, notwithstanding the severity of the weather and the paucity of information as to the character of recent developments. We are informed that the condition of the roads leading to the various mills is so bad as to render transportation almost impossible, and that it will be necessary to cease hauling entirely for a few days in order to repair these roads.

**HALE & NORCROSS**—no sales; firmly held at \$3,000 per foot. The annual meeting of stockholders of this company will be held on Wednesday, March 13th.

**SAVAGE**—maintained very uniform rates during the past week, opening at \$1,950, seller 60, then selling at \$1,990@1,960, and closed at \$1,930. We have no advices from this mine at the time of going to press.

**CROWN POINT**—advanced from \$890 to \$925, then gradually receded to \$885@870, and closed at \$830, seller 30. This company, together with all the other claims located in Washoe, has been obliged to rely on telegraphic communication for information in regard to the operations there. Mail dates of the 18th and 19th of February show a yield of 110 and 114 tons of ore respectively on those days, and a telegram of the 25th says that the roads are in a horrible condition, notwithstanding the bullion returns to that date amounted to \$70,500.

**YELLOW JACKET**—has been dealt in to a large extent, over 500 shares having changed hands within the past week, opening at \$680, declining to \$630, rallying to \$710@740, then selling at \$687.50, closing at \$710, b 30. This, of all companies, is the most tardy in giving information to its stockholders in this city, but the inclemency of the weather during the period under review may explain recent delinquency in this respect. It is said that in sinking a vein from the lower level in the North mine, fine ore was discovered. Further than this we have no advices.

**GOULD & CURRY**—met with considerable inquiry, but at declining rates. It sold on Monday at \$510, seller 30, then at \$480, and closed yesterday at \$470, s 5. The latest mail dates, some ten days old, report a vigorous prosecution of prospecting labor. On the fourth station work is being continued to the west, with no improvement of an encouraging nature. The drift from the fifth station west had been carried forward 58 feet.

**CHOLLAR-POTOSI**—has exhibited nearly as much activity this as during the previous week. The closing quotations of last Friday have been well maintained, and sales were made at \$250@256 in the early part of this week, receding to \$238, then rallying to \$248, and closing yesterday at \$239. The same difficulty with regard to full advices prevails with this company as with the others, and the only resort is the telegraph, which says (Feb. 28th) that the developments on the Blue Wing Station of this mine "look well." It is said that the bullion yield during the month of February will be fully as large as that of January.

**OPHIR**—has declined from opening sales of \$220@230 to \$202.50@205, obtaining at the close \$210. Advices by mail of the 18th ult., say that in the ninth station, from the end of the north drift, which is 430 feet from the Mexican company's ground, a drift is being made to the west, which has pierced the rock and now carries quartz and clay. The tenth station drift, east from the shaft, at the above date, was in 54 feet.

**IMPERIAL**—is active, and the recent advance has been well maintained, the slight downward tendency at the close being for the most part attributable to the inauspicious weather; however, it improved from \$185 to \$187.50, then sold at \$170, s 30, and at the close realized \$170, s 30. A telegram of the 25th says that the bullion product to that date for the current month amounted to \$53,000. A dispatch of a later date (the 27th) contradicts the rumor which had gained credence here that a cave had taken place in the Alta mine, and adds that there is no probability of any cave. It is said that there is a large amount of ore developed, and that the mills are running up to their full capacity.

**EMPIRE**—sold to a larger extent than usual, declining from \$190 to \$152.50, and closed yesterday at \$160, seller 3. We learn that the total expenses of this company in February were less than \$14,000, and the amount of bullion produced is \$35,000, which insures the usual monthly dividend.

**BELOCHER**—improved from \$110 to \$115, then sold at \$107, and closed yesterday at \$102.50. **CONFIDENCE** sold at \$17@17.50. **OVERMAN** declined from \$17 to \$13.50, and closed at \$15.50. **BULLION** receded from \$16.50 to \$14 per share, and **DANEY** sold at \$7.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$796,998.50.

**LOWER CALIFORNIA COLONIZATION.**—A letter from Mazatlan says that J. Ross Browne is in that city, on his way to confer with President Juarez in regard to the amending of certain stipulations relative to the Lees grant of land in Lower California. He expressed a very poor opinion of the prospects for settlers in that country.

**GETTING UP.**—Portland is said to be getting up out of her ash heap with almost miraculous rapidity.

Our Free List in San Francisco, will hereafter receive the Press through the post office, postage free.







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Amador County.

From the *Ledger* of Feb. 23d: Last Monday they cleaned up, at the Oneida mill, a run of eleven days with forty stamps, and the result was eight thousand dollars, taken from five hundred tons of rock. The mine is now in such condition that plenty of rock can be taken out to keep their mill constantly running.

## Butte County.

From the *Marysville Appeal* of Feb. 20th: At Bangor, a large company from Timbuctoo is engaged in running an incline into a hill near town, through solid rock, for the purpose of striking a gravel bed which is supposed to be deposited in the hill. They use water power on an overshot wheel, for the purpose of raising the rock from the bottom of the incline.

The *Record* says the mining prospects at the lower end of town, and also at the bluff, continue good. Those interested in the developments already made, are of the opinion that they have struck a good thing.

## Calaveras County.

From the *San Andreas Register* of Feb. 23d: At Campo Seco, C. F. Huffman, superintendent of the Lancha Plana Copper Mining company, gives notice that proposals will be received up to the 25th instant, to run fifty feet of tunnel. The Lancha is one of the best claims in the district. It is the intention of the company to put on a large force in the spring, and prosecute the work in earnest.

The *Copperopolis Courier* says the Keystone is sinking on the main shaft with industry. . . . Immense piles of ore have accumulated at the Union works since the freighting ceased. . . . The Empire has been yielding some very rich ore within a few days.

## El Dorado County.

From the *Courier* of February 23d: Another rich discovery was made last week in Kelsey district, by Messrs. Stewart & Ellis. Specimens of the rock brought to town are as rich as any we have yet seen. Several hundred pounds was taken out at a depth of only eight feet. The ledge is well defined, and varies from eighteen inches to two feet in thickness.

Some specimens of rock shown us from Gillenwaters, Christian & Co's claim, on Clay Hill, will average twenty dollars to the pound. The company have a tunnel in a hundred feet, and in about forty feet more they expect to strike the ledge.

Messrs. Dickerhoff, Reed & Co. have taken up what is known as the Miller lode, three miles from this city. Their shaft is down twenty-five feet, and at that depth the ledge is sixteen feet wide. The rock averages from fifty cents to one dollar per pan-full, and growing richer as work progresses.

From the *Democrat* of same date: A Kelsey correspondent informs us that rock recently tested from two lodes in that district, averaged thirty-two dollars to the ton. The region was noted in early times for its rich placer diggings.

A Placerville correspondent of the *Sacramento Union* says, Feb. 22d: In a ledge fifty feet in width, running through the old Buckeye claim, on Texas Hill, every pan from several places on the ledge prospects from five to fifteen cents to each pan. The owners, H. A. and W. Wright & Co., intend to put up an anrastra immediately. A ledge of the same character was found last Saturday by E. Clackley, opposite the residence of T. Fraser, which pays ten cents to the pan. The Long Island claims were purchased a few days since by French & Co., of Gold Hill, at \$2.50 per foot. Hall & Co., on the same ledge, are getting fine rock. They intend to put up an anrastra immediately. Shephard & Co. have got ready to take out rock. One thousand dollars of coarse gold has been picked up from the dirt within the last four weeks. Two new mills to crush cement have recently been put up on Texas Hill, which promise well. The cement mills on Smith's Flat are all paying good wages. At Brownsville, Tullock & Co. have made three runs on rock from the Independence ledge, which paid between \$35 and \$50 per ton. Stillwagon & Co., on the South Fork, have made one run with their new mill which paid \$65 per ton. The old Eagle claims at Grizzly Flat, are paying better than they did ten years ago. A new 40-stamp mill will soon be completed on the old Steele ledge.

On Saturday, Feb. 23d, at Centerville or Pilot Hill, in El Dorado county, about fifteen miles from Folsom, about forty pounds of rich ore was taken out of an old

quartz ledge owned by Martin, Owen, Goodpasture and another individual, most of which ore is pure gold.

## Klamath County.

From the *Yreka Union* of Feb. 16th: Dick Humphrey, expressman and mail carrier down the Klamath river, reports that the miners of the various camps along the route are beginning to take out gold, and that the prospect for a profitable mining season is good.

## Nevada County.

From the *Transcript* of Feb. 20th: The mining on the river bars, near Washington, has been mostly suspended on account of high water, but all the companies will resume operations early in the spring, and more mining will be done than for several years.

Same of 23d: We understand that a new ledge was recently struck by Brown & Co., on the ridge near the Star Spangled Banner mine, and the rock resembles the ore taken from that mine very much. The ledge is large and well defined, and good prospects have been obtained, but it is not yet sufficiently opened to thoroughly test its value.

Palmer's mill, on Friday, started up on a lot of 150 tons of rock from the Wagoner ledge. This lead is owned by Sigourney and others and is located upon Piety Hill. The quartz looks well.

Same of 26th: The Kennebec Company, at Birchville, after a run of twenty-eight days, cleaned up \$7,000. This company is engaged in hydraulic mining.

From the *Gazette* of 20th: In Grass Valley, some \$28,000 was melted in "bricks" yesterday at the Eureka; the Empire mine is yielding gold in fabulous quantities; while the New York Hill, Heuston Hill, and North Star, are doing better than ever before.

We have received a rich specimen from the Banner mine, rich both in free gold and sulphurets. It was taken from the lower south level.

From the *Grass Valley National* of Feb. 21st: Capt. Lee set the additional fifteen stamps of the Ophir Mill to running, on Tuesday last, thus putting thirty stamps in motion. We perceive that, notwithstanding the flood, the whole number of stamps are going to-day.

On the Snow Ball Ledge, machinery will probably be erected in the spring.

From the *Grass Valley Union* of Feb. 23d: In the O'Connor mine, Union Hill, the mill was again started upon Monday last, and on Thursday they struck the ledge. At the depth of one hundred and eighty feet, they have a fourteen-inch vein, which shows largely of free gold.

EXCELSIOR.—The editor of the *Meadow Lake Sun*, who recently visited the Grant mine, at Carlisle, says the mill is running regularly, and crushing eight tons of rock a day, which yields on an average \$50 a ton. Nine men are now employed to mine the rock, deliver at the mill, and reduce it. The mine never presented a more flourishing and prosperous condition than now.

## Placer County.

From the *Stars and Stripes* of Feb. 20th: The Rising Sun Quartz Mining company, in the vicinity of Colfax, who had ten tons of rock crushed about three months ago, which yielded \$53 per ton, have been since that time engaged in sinking a number of shafts. The result being satisfactory, permanent improvements will at once be commenced.

He who, a few months hence, will take position on the narrow ridge between Ophir and Newcastle, not more than half a mile distant from the line of the Pacific Railroad, will be able to take in at a single view no less than fourteen mills engaged in crushing quartz and cement.

From the *Herald* of Feb. 23d: The Golden Rule company were to start their mill at Stewart's Flat again this week. A fine roasting furnace has been erected, and other improvements made since their mill was stopped.

Some rock recently sent from the Canada Hill mine, to be worked at the Golden Rule mill, yielded \$23 in gold to the ton. The ledge averages about four feet in thickness, and the rock crushed was taken indiscriminately from the lode.

## Plumas County.

From the *National* of Feb. 16th: Messrs. Judkins and Kellogg commenced crushing quartz again in their old mill at Round Valley, on Monday last. They have started out to bring in some castings which were stopped by the snow.

Franklin Co., at Saw-pit Flat, who have been running a tunnel for two years, are in high glee at the prospect of striking the channel. Their tunnel is upwards of 2,300 feet in length.

The machinery for Mr. Light's new quartz mill, arrived in Indian Valley last week.

Letter from Greenville to same: Quite an excitement prevails in town in consequence of the discovery of rich gravel diggings in the side hill near North Cañon, on the road leading from Round Valley to Greenville. Parties have been very active during the last few days staking off claims and digging prospect holes.

From the *Union* of same date: Two rich quartz ledges have recently been discovered near the Crescent ledge, in Indian Valley. Five stamps of the Crescent mill run four days on rock taken from one of the ledges, and the owners realized over \$400 from the run.

Blood's quartz mill, near Greenville, for a run of six days, on rock taken from the Indian Valley ledge, paid \$2,600.

Messrs. Killey & O'Neill are at work on a quartz ledge recently struck near Elizabethtown, and are getting some very good prospects. Another company is working upon Nigger Gulch Lead, and are taking out some good paying quartz.

There have been some rich quartz ledges struck near Mill Creek, which prospect well. Mr. Kellogg has a nice silver brick containing \$6 that was worked from the Forty-nine ledge, eighteen miles from Mill Creek.

## Sacramento County.

From the *Folsom Telegraph* of Feb. 23d: Within the county of Sacramento, in that country lying east of the American, and running from Farmer's Diggings thence south to the Cosumnes river and Amador county, embracing the entire to the El Dorado county line, lies a rich mineral district, comparatively unprospected and undeveloped. Besides the placer mines of old, throughout this region runs the great line of quartz ledges, upon which in Amador county are located the rich claims of Hayward and others. In El Dorado, on the same range, near Latrobe, extraordinary rich claims are now being worked. The reason why claims equally rich in Sacramento have not been struck, is that they are off the main routes of travel, in a country desolate in appearance, and very seldom visited. An old miner who has been prospecting in this vicinity for a week or two past, and has located a claim near Buffalo Creek, says there is more good mining ground within a circuit of ten miles of Folsom than in any portion of the mineral region he has visited in this State. In this section a portion of the mineral lands are owned by the Natoma Water and Mining Company, by purchase from the Leidesdorff grant. The company offers every facility to the miner, by leasing to him at nominal rent, and furnishing water, where possible, at low rates.

## San Bernardino County.

From the *Guardian* of Feb. 16th: Mr. Geo. E. Moore, the proprietor of the Green lead, brought to our office during the week a large lump of gold-bearing quartz. The ore was taken from the shaft at a depth of two hundred and seven feet, and fine gold is discernible all through it. The ledge is well defined, with a width of about fourteen inches. This mine is in the vicinity of Holcombe Valley, thirty-eight miles east of this place.

## Shasta County.

From the *Courier* of Feb. 23d: L. Crane, some time ago, commenced prospecting on a large bar above Portuguese Flat, on the Sacramento river, and has lately struck a hack channel which prospects very rich. The bar contains several acres of mining ground, but the supply of water is limited.

A specimen worth \$31 was picked up in the Brumfield claim, on Flat Creek, last week. It was of an oblong shape, entirely free from quartz, and looked bright as a new coin. Several similar specimens have been found in the same claim this winter.

There are but eight men remaining in Copper City. Unless the Kellinger company resume work in the spring, the place will be left without a solitary inhabitant.

## Siskiyou County.

From the *Yreka Union* of Feb. 16th: The following items are from Mugginsville: D. S. Hollenback & Co. commenced washing in their hydraulic claims on Monday last. The prospects for a large yield are fine. . . . Shelley & Co. are preparing to commence work. . . . Luke Shaw is engaged in cutting a ditch to carry water to the new diggings below Mugginsville. The prospects are that this will prove one of the richest mining districts in Northern California.

From the *Journal* of Feb. 16th: New quartz ledges have been discovered on Humbug, which, judging from the specimens, indicate rich deposits of gold.

Owing to the high water and cold weather, business in mining is quite dull in Scott River, the former filling up claims, and the latter rendering their cleaning up rather uncomfortable work. As soon as the weather

gets warm and the spring opens, the prospects are favorable for busy times.

## Tulare County.

From the *Delta* of Feb. 13th: We learn that three of our business men have just completed the purchase of a very valuable mine in the Long Tom district, upon which they will immediately erect a mill.

## Yuba County.

From the *Marysville Appeal* of Feb. 27th: The shafts of the Pennsylvania and Jefferson Companies have been filled by the rains, partially suspending work. We learn that the Jefferson has now been pumped out, and the Pennsylvania was expected to finish last evening. The latter has managed to raise quartz enough to supply one-half the battery.

The Bateman Company, whose ledge is two and one-half miles west of Indiana Ranch, have lately cleaned up the result of forty-three tons of rock, which, without including the amount in the Chile mill, yielded \$1,100, paying at the rate of \$30 to the ton. The ledge is from a foot to three feet in width, and the gold sells for over \$18 per ounce.

Brown's Valley letter to the *North Californian* of Feb. 25th: The Dannebroge, Sweet Vengeance and Rattle Snake (Old Yuba) will resume operations in a few days; we are told on the first of the incoming month. We are confident that before another winter Brown's Valley will stand at the head of important mining towns in the State.

## COLORADO.

From the *Denver News* of Feb. 6th: Ore from the Hattie Jane lode, in Granite district, Lake county, recently assayed \$1,307.72 in gold per ton.

A specimen from the Vermont lode, Georgetown, assayed \$1,958.60 per ton. At fourteen feet in depth the pay streak is from two to six inches in width.

Letter to same from Boulder: Valuable discoveries are made daily. Three ounces of quartz taken from the Aetna tunnel shaft, at a depth of ten feet, gave seventy-three cents in free gold. This ore also contains a large percentage of silver. The width of the vein is not yet ascertained, but it certainly is among the biggest things in the district. There are also two other tunnel companies at work here.

About forty shafts are being worked, thirty of them showing now sulphurets of copper and iron of the richest quality. There are also rich silver veins here. A furnace is now in the course of construction.

From the *Register*: Seven assays of ore from the Bethany lode gave an average of \$10,912 per ton.

## IDAHO.

A letter from Lemhi, Salmon River mines, to the *Boise City Statesman*, dated January 2d, has the following: "I think that this will be the best and largest camp ever struck in the country, outside of Boise Basin. There have been no very large strikes made yet, but the country, as far as prospected, will pay well. We have eight large districts. These diggings were struck late in the fall. The gold is coarse, and assays \$19.70 per ounce. The largest piece was picked up in Bear Track district, weighing \$15.75. These diggings are from seven to ten feet deep, with three feet of gravel. Prospects are from five cents to three hits to the pan. This district is called Nappies, and is the first discovery, and here the most work has been done. From five to sixty dollars to the hand has been made."

## MONTANA.

From the *Post* of Feb. 2d: The Christ-nought mill on the Oro Cache was started on last Monday, and its work was beyond the expectations of the most sanguine. The pans and rollers work admirably. The mill is known as the Chilean, the same as that used in the U. S. Mint at Philadelphia.

The last clean-up from the two mills crushing from the Whitlatch Union lead is by far the biggest thing in that line yet, \$10,500 being the amount taken from the plates and batteries of Hendrie's 18-stamp, and Turnley's 10-stamp mill, in one week's run. Of this Turnley's mill cleaned up \$6,000, and the balance came from Hendrie's. The former ran only five days and a half, and the latter the full six days.

Mr. Hendry's mill, on Grizzly Gulch, in Edgerton county, running eighteen stamps, cleaned up, for the six days ending January 22d, from one hundred and forty-six tons of second-class Whitlatch Union ore, \$4,826. This mill is run at an expense of less than five hundred dollars per week, and made on this run a clear saving of three hundred and twenty dollars per diem.

Nearly ten millions of dollars in gold dust have been shipped from this city and the surrounding districts during the past year.



## NEVADA.

Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Treasure* of Feb 14th: For two years past the mining interest at Peavine has been comparatively dormant; but during the last few weeks several sales of mines have been made, and machinery to work the Bevechimer, Empire and other claims is now en route thither. This morning we were shown some copper ore from the mine that will assay ninety per cent. of the pure metal; and the vein is large, clearly developed and apparently inexhaustible.

From the Gold Hill *News*: Mr. Fleming, formerly of Gold Hill, the "Old Prospector," has finally struck a big thing in Wilson district, on the Walker river. The ledge is very large and of surpassing richness. The quartz is gold-bearing, and will, from present indications, prove a fortune to the old gentleman. The reports from this district are very encouraging.

## OREGON.

A letter to the *Bulletin* has the following: With that singular tendency to failure which characterizes the enterprises of Oregonians, the gold mines of the Cascade mountains are lying unworked, notwithstanding they opened richer and under more favorable auspices than any similar mines that I remember. Nobody seems to know what the trouble is. The Santiam mill is idle—the whole excitement blown over, and work entirely stopped. Yet gold there must be in those mountains, since scarcely a trout stream in the State but mingles gold with its sands in perceptible quantities, if not in paying ones. Silver probably exists along with the gold, but has not yet been reached in working leads. Float ore, of almost pure copper is often found in the coast range, though the veins have never been discovered. It is the same with lead and other ores. These sources of wealth must lie for a much longer time undeveloped, since both capital and labor are required to make them available, while the people of Oregon are not rich, and have a wholesome horror of hard work.

From the *Alta* of Feb. 27th: J. B. Edgington has brought to our office some rich specimens of auriferous quartz, taken from the I. X. L. mine, at Cañon City, Grant county, Oregon. The lode is represented to be twenty-five feet wide, and full of such specimens.

It is said that the coal on Yaquina Bay is to be opened at once, with a view to thorough development. The croppings were found near Oysterville.

ANOTHER HUMBLED EXPOSED.—J. P. Bryant, the whilom "Doctor," who cured by the "laying on of hands," and who came before the San Francisco public just long enough after the celestial "Li-Po-Tai" subsided, to take his turn as a prodigy, has come to grief. He is sued for thirty thousand dollars damages for causing total blindness in a man whose eyes he positively agreed to "cure" in twenty days' time. As a part of the treatment, he induced his patient to have four sound teeth extracted; thus leaving the poor fellow, finally, "sans eyes, sans teeth, sans everything."

It will be remembered that quite a number of our citizens, who have been generally considered people of sense, endorsed this individual as "really having performed some extraordinary cures." When will people learn to take it for granted, that those physicians who have gone through the regular steps of a medical course, aided by the written experience of so many great names, and the personal teachings of living men who are acknowledged to be at the head of their profession, are more likely to treat disease understandingly, than those who affect the mysterious and the supernatural—who talk confidently, and promise positively? Such men are entirely lacking in that modesty which always characterizes those who are truly scientific students of that art which they feel can never be perfected; and it is astonishing that people of sense cannot learn to distinguish the quack by this sign.

VARIETY IN CORN.—No less than one hundred and fifteen varieties of corn are to be sent to the Paris Exhibition by W. S. Carpenter, of New York. This is probably the finest collection of the kind ever made.

## Argentiferous Lead Smelting in Humboldt County, Nevada.

NUMBER TWO.

## THE SMELTING FURNACES

Are a modification of the English Castilian Furnaces, lined up with fire brick at first; but more recently with a variety of sandstone found in the vicinity, which proves superior to the best English brick. The hearth or bottom is a sort of crucible, into which the metal sinks on separating from the slag, and thence is tapped off and ladled into suitable molds for subsequent handling. The ore, as it comes from the mine, is placed upon a platform level with the feeding doors of the furnace. It being a carbonate, and free from sulphur, no previous roasting is required. As it is very friable, at least all that is taken to the furnace, it requires no stamping—the larger lumps are readily broken to the requisite degree of fineness by a hammer.

In preparing a charge, several tons of ore are spread upon the platform, over which a layer of ore, with about 25 per cent. of flux is spread—this amount varying somewhat, according to the character of the ore. The mass is then mixed in charges of about 100 pounds each, and shoveled into the furnace alternately with the charcoal at the rate of about twenty-five baskets of the latter to the ton of ore. The flux employed is composed as follows:

Slags, previously used.....	25 per cent.
Lime.....	2 to 5 "
Litharge.....	5 to 10 "

The slags, as they come from the furnace, are carefully picked over, and all that contain from 3½ to 5 per cent. are thrown aside for subsequent treatment, and are employed, as above, for flux. The litharge employed is also produced in subsequent operations, as will hereafter be seen; so that all the flux which it is necessary to procure outside of the works themselves, is the small quantity of lime, and that is obtained within a few miles of the works.

The size of the interior of the furnace, below the feed opening, is thirty inches square, by twelve to fifteen feet deep. The feeding is continuous, and the furnace is kept in operation until the gradual wear of the linings render extraordinary repairs necessary. From past experiments, it is expected that with the present refractory sandstone for linings, three to six months run will be made without stopping.

The main body of the furnace is constructed upon arches, so as to admit of making temporary repairs while the furnace is in operation. From five to six hundred pounds of ore, aside from the flux and coal, is placed in the furnace every hour; about eight tons each twenty-four hours. The precise amount is governed by the rapidity with which the mass settles. The product of this furnace is of course an alloy of all the metals which the ore contains. At this mine this alloy consists of lead, silver, antimony and iron, in the proportions already given. The next process is for the purpose of getting rid of the antimony and iron; which is accomplished on the principle that those metals will oxidize more freely than the lead or silver. This operation is accomplished in

## THE CALCINING FURNACE,

Which is constructed on a modified principle of the ordinary reverberatory. The sole or hearth of the furnace consists of a cast iron pan about 13 feet long by 5½ broad, and 10 inches deep. The roof of the furnace, which is about ten inches high at the fire bridge, descends gradually until it is only six inches high at the opposite extremity or throat. Six air openings, three on either side, are made through the walls of the furnace, above the hearth, like the working holes of the reverberatory, but smaller. They are used to secure a free access of air to the surface of the melted mass in the pan, by which the oxidation is the more readily produced.

From twelve to fifteen tons of the mixed metals which have been obtained from the smelting operation, are placed in the iron pan which constitutes the sole of the calcining furnace. This metal is melted and gradually raised to a red heat, at which it is kept for some considerable time, subjected to the oxidizing influences of the atmosphere, which enters through the side opening already spoken of. The antimony and iron (and copper, if present) now gradually rise to the surface, become oxidized and is skimmed off, or passes off in vapor, as the case may be. The chief portion of the antimony in these works passes off into the flue, where a portion of it condenses and falls into a receptacle arranged to receive it, in the form of oxide of antimony. Antimony thus becomes no inconsiderable part of the product of this mine. The fire place has a length equal to the breadth of the pan, and is placed precisely as in the ordinary reverberatory furnace. The metal is introduced into the pan in pigs as it comes from the smelting furnace. The first charge, as we have already said, is about twelve or fifteen tons; as soon as this mass is materially reduced by the oxidation and sublimation or skimming off of the antimony and iron, a fresh quantity of crude metal from the smelting furnaces is added. These additions are continued until from twenty to twenty-five tons have been introduced, when the pan becomes filled with a pure alloy of lead and silver, or "rich lead" as it is now called. This is accomplished in about ten days; when the furnace is closed and the metal tapped off, and a new charge is introduced, and the same process as above repeated. The process of refining is daily tested, by assay, as the work proceeds. The "rich lead" is now ready for the final operation of purification, or separating the lead from the silver. This is usually done in one or two ways—the first by what is known as Pattinson's process, the other by cupellation. The former is generally used as an assistant to the latter, and not as a complete operation, and will be described at a future time; the latter is the method adopted at these works. The furnace employed is of a somewhat peculiar description, and is termed

## THE REFINING OR CUPEL FURNACE.

Cupellation, accomplished in one manner or another, has been known from the most ancient times. This process is evidently referred to in the following passage from Ezekiel xxii, 18-20:

"Son of man, the house of Israel is to me become dross; all they are brass, and tin and iron, and lead in the midst of the furnace; they are even the dross of silver."

As they gather silver and brass, and iron and lead and tin into the midst of the furnace to blow fire upon it, to melt it; so will I gather you in mine anger and in my fury, and will leave you there and melt you."

Any one who has seen the glowing action of the calcining and refining or cupeling furnace, with wave surging after wave across the surface of the molten metal, carrying off the dross of antimony, iron, copper, tin and finally the lead, leaving upon the hearth nothing but the pure silver, cannot fail to appreciate the terrible force of the figure employed by the prophet; and no one, under such circumstances, can fail to infer, most unmistakably, that nothing but the process of refining and cupeling, substantially as practiced at the present day, is there described. The same process has been employed by the Romans, and all modern nations, down to the present century. The only improvement yet discovered is that of Pattinson's, already referred to; and even that is employed only under certain conditions. Cupellation is the process employed at the works under consideration; which process we will now attempt to describe.

Four general forms of furnaces are employed in this operation, with slight modifications, by different metallurgists. That employed in this locality is known as the English, in contradistinction from the German furnace. This is also of the class of reverberatories, with high roof and fire-place, as usual, but chimney of small elevation. It is usually made double, with a hearth upon

each side of the chimney. This furnace has a movable hearth, sometimes fixed on wheels, to be moved out on a railway, and sometimes to slide out. In operating this hearth, it is necessary that its elevation should be adjusted from time to time, so as to admit of the proper action of the oxidizing flame upon the surface of the molten metal. This has usually been done with wedges. Mr. Nason accomplishes this object by the use of set screws, working underneath the hearth, precisely as such screws are used over the top of amalgamating pans for regulating the elevation and depression of the mullers. The hearth of this furnace is oval in shape, and consists of a shallow platter-like depression. It is made by first constructing an oval iron frame work, usually about five feet long by forty inches broad, and five to six inches deep. This frame work, which is technically called a test-ring, is closely packed with a mixture of bone ash and willow ashes. The hearth thus prepared is scooped out with a gentle inclination to the center, at which point the material is left about one inch deep. The center of this excavation is somewhat flattened, so as to give more capacity to the same. This is properly called a "cupel."

When thus prepared, and after being dried for several days, it is placed in position, and the fire started gradually, so as not to warm up the cupel too rapidly, else it might crack. When the temperature has reached such a height as to give the cupel a dark red appearance, the lead, which has passed through the calcining furnace, and been there deprived of all the metals except its silver, is now carefully placed in the cupel, in the shape of pigs. As soon as the oxidation begins to take place, a light blast is turned on from the rear of the furnace, so as to drive the litharge, in a constant stream, out at the gate-way of the cupel in a liquid state, into iron vessels. As the litharge flows off, more lead is added until the hearth becomes filled with the silver, when the furnace is allowed to cool, and the coke taken out and sent to the assaying office, where it is melted, assayed and stored for the market.

THE AMERICAN NATURALIST is to be the title of a popular magazine of natural history, which is soon to appear, under the direction of the officers of the Essex Institute, of Salem, Massachusetts. It will appear monthly, and will supply a long existing demand for a popular illustrated publication in that department of science. The magazine will give illustrated reports of scientific excursions, undertaken in behalf of the science of natural history, full explanations of the principles of the structure, development and classification of animals and plants, both living and fossil, together with new discoveries in geology and archaeology. Directions will also be given for collecting, arranging, preparing and mounting specimens, etc., etc. Each number will contain forty-eight octavo pages of reading matter and illustrations, or nearly six hundred pages a year, for the low subscription price of \$3 per annum. A. S. Packard, Jr. in connection with E. S. Morse, A. Hyatt and F. W. Putnam, will act as editors. The list of contributors, as published, numbers fifty-three names, among which we notice most of the eminent naturalists and scientific men of the country. Such a magazine will form a most important addition to the scientific publications of the country, and from its low price, and able corps of editors and contributors, can scarcely fail of meeting with a liberal patronage.

PETROLEUM.—The exports of petroleum from the United States for 1866, were sixty-three million gallons. Prices, at latest dates, were about twelve and one-half cents per gallon for crude, in tanks, and thirty cents for refined in barrels, in bond. The value of the exports is not far from twenty million dollars, or nearly enough to pay the interest on our bonds held in Europe. There was a large stock on hand at the close of the year's business. Prices were reduced on account of the necessity of competing with the coal distillers of England. The natural oil is preferred to the artificially produced article, when it can be had at the same price. The flowing wells of the United States are proving unpleasant competitors to the English coal stills.



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

C. W. M. SMITH. W. B. EWER. A. T. DEWEY.  
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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 11th, 1866.

Mr. Thomas Starr is Agent for the MINING AND SCIENTIFIC PRESS in Nevada, and will canvass the principal cities, towns and districts of that State. August 25, 1866.  
Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

Mr. S. D. Whitaker, is our authorized Traveling Agent and solicitor from this date. Jan. 1, 1867.  
Mr. E. L. Smith, is a duly authorized Agent for this paper. February 25, 1867.

## San Francisco:

Saturday Morning, March 2, 1867.

## Notices to Correspondents.

J. P. H.—Sacramento. Beach sand is worked, for gold, at a point about two and a half miles south of Crescent City, Del Norte county. A full description of the manner of working this sand was given in our issue of August 11th, 1866. One of the claims is said to pay about eight dollars per day to the man. One of the parties owning this claim, assures us that he made as high as \$75 per day, in 1854, working the sands of Gold Beach, near the mouth of Rogue River. He thinks there may be other rich spots along the coast in that portion of the State. Considerable gold is found in the sand, on the river shore at Martinez, opposite Benicia.

CALIFORNIA is informed that the experiments of Mr. Joule, alluded to in a former number of this journal, appeared originally in the Phil. Tran. for 1850. They showed that the actual quantity of heat developed by friction is dependent simply upon the amount of force expended, without regard to the nature of the substances rubbed together. He found, as a mean of forty closely concordant experiments, that when water was agitated by means of a horizontal brass paddle-wheel, made to revolve by the descent of a known weight, the temperature of one pound of water was raised 1° F. by the expenditure of an amount of force sufficient to raise seven hundred and seventy-two pounds to the height of one foot. When cast-iron was rubbed against iron, the force required to raise one pound of water 1° F. was found, as a mean of twenty experiments, to be about seven hundred and seventy-five pounds, and by the agitation of mercury, by means of an iron paddle-wheel, it was found to amount to seven hundred and seventy-four pounds.

CRIBBO is right; the ostrich feathers alluded to in our notice to correspondents on the 19th ult., as being directed to be impressed on both sides of money permitted to be coined at Aberystwith, South Wales, is the heraldic bearing of the Prince of Wales since the battle of Cressy, on which day it was adopted as part of the *Spolia Optima* by the then prince of Wales, better known historically by the name of the Black Prince, a cognomen applied in consequence of that memorable warrior and statesman. The King of Bohemia was one of the most steadfast and courageous allies of the Crown of France. At the battle named he was slain, his body being found amidst one of the thickest heaps of slaughtered foes. His cap bore the hereditary insignia of three ostrich feathers, fixed in a gold wreath, having inscribed thereon the words *Ich Dien*—I serve. Tradition also relates that the celebrated large ruby, which, however, is by some asserted to be a spinelle, which forms a conspicuous feature in the British Crown, also ornamented the cap of the Bohemian monarch. Be that as it may, since that date the Prince of Wales' "Shield of Arms" has remained as above described.

CHEMISTS.—The solubility of substances by water is generally increased in proportion as the temperature is elevated, but this is not uniformly the case. Lime, and several of its salts, offer remarkable exceptions. Water, just above the freezing point, dissolves nearly twice as much lime as it does when boiling, which is the cause why water, saturated with lime in very cold weather, becomes milky when heated and recovers its transparency on cooling.

## Blasting by Electricity.

NUMBER TWO.

[Continued from Page 104.]

As some of our readers may be desirous of making the experiment of blasting by electricity, we will briefly describe how the thing may be done. Nearly every one is conversant with the manner of sending "a current of electricity," as it is called, though improperly so, from one pole through a length of wire, to the other pole of a battery—in other words, producing an electric circuit. This circuit may be a few inches only, or it may be extended for hundreds of miles, provided the wire is properly insulated.

If, in the course of the circuit, the wires should be passed through a cask of gunpowder, ever so sensitive to ignition, there would be little danger of explosion, except with a battery strong enough to nearly destroy the wires.

In order to fire the powder, there must be some slight interruption to the current. If the wires were to be cut where they passed through the powder, and the ends separated the eighth of an inch or so apart, the powder would be fired. When the current passes along a continuous wire, no spark is perceptible; but if the wire should be cut or separated a little, as above described, a spark would be seen to bridge the space between the two ends. It would be this spark which would fire the powder.

Again, if a short piece of platinum wire, say half an inch or an inch long, be joined by its opposite extremities to the two ends of the severed iron wire, so that the current, in making the circuit, would have to pass through the wire so inserted, the insulated platinum wire would instantly glow with heat. A very slight current would heat it red hot—a heavier one would melt it. Steel wire, connecting the two ends of iron wire, will also heat, but not so rapidly or intensely as platinum.

The heating of the platinum or steel wire, is due to the fact that those metals are bad conductors. The current is apparently retarded in its passage. Excessive friction is produced by the particles of platinum or steel, by which a small wire of either of these metals is heated red hot or even melted; thus firing the powder. So when the current is made to cross a small open space, between the separated ends of the wire, friction is engendered in the atmosphere, so as to produce heat and a bright flame, which would also fire the powder, were it in contact therewith.

Were a large wire to be extended from a positive to a negative cloud in the atmosphere, there would be no visible discharge of electricity (no lightning), and of course no thunder. The phenomena of lightning are produced by the friction and consequent heat generated by the rapid passage of electricity from one cloud to the other, in the absence of any good conducting medium for its quiet passage.

The reader will readily perceive, from the above, how powder is fired by electricity, and how electricity may be sent by a continuous wire, of good conducting power, directly through a keg of powder without igniting it.

The device of placing the two ends of the wire near together, but not so as to touch each other, would be found very difficult in practice; hence, the two ends are joined by the short piece of platinum wire, which accomplishes the same purpose. The only difficulty in the way is to devise a means of doing this readily, and keep the wires from coming in contact above the point where it is connected by the platinum wire. We subjoin two diagrams—one, where the wires are properly arranged, and another, where they are brought in contact:

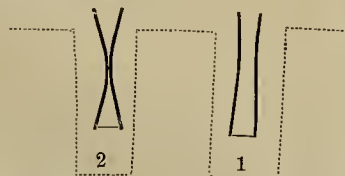


Fig. 1 represents a hole, with the conducting wires properly inserted, and their

extremities joined together with a short piece of fine platinum wire. Fig. 2 has the main wires pressed into contact with each other, as they sometimes are by inserting the charge. In the first the electric current will pass through the platinum wire, which it will heat to redness, and thus fire the charge; in the second, the current will pass from one main wire direct to the other, at their point of contact, and not reach the platinum wire at all, because the conducting power is greater at the point of crossing than at the platinum junction. The consequence will be that the electric current will pass through the powder, at the point where the main wires meet, without igniting it, and a blast so arranged will fail. The transit of the current would be the same were the main conducting wires to meet at any other point. Sometimes, when a very powerful battery is used, the current will divide at the point where the two main wires meet—one portion of the current returning direct, while the other passes through the platinum wire. If the latter is sufficiently powerful, the charge will be exploded.

Various devices have been contrived to prevent the wires from coming in contact during the filling and tamping of the hole, and also to secure ignition with a comparatively weak current. One very effective way may be described as follows: Take a fine cork, such as is ordinarily used for a quart bottle, cut off a section from a quarter to a half an inch thick; then take two pieces of wire, each of suitable length to reach two or three inches above the hole made for the charge, and pass them both through the cork, about half an inch apart; this being done, connect the ends which have thus been passed through the cork with a short piece of platinum wire, as shown in the diagram. Now, in order to keep the two wires apart, as they pass upward out of the hole made for the blast, a small flat piece of pine wood may be placed endways, resting upon the cork, between the two wires, and extending as high as the powder reaches. In order to keep the wood in place, it may be necessary to wind a string around both wires and wood. From that point, by careful manipulation, one wire may be kept upon one side of the hole, and the other upon the opposite side, the tamping being done between them. This will answer where there is no considerable amount of mineral in the tamping used, or where the rock which is being blasted is not such as would serve to conduct the current away from the wire.

The above directions having been observed, the main wires should now be connected with the two ends of wire projecting from the hole. One of these wires should be conducted along to, and connected with one pole of the battery, and the other with the opposite pole—care being taken, all the while, to keep the two wires apart. In a tunnel, one wire should be conducted along on one side of the tunnel, and the other upon the opposite side, to the battery, which should always be placed at a convenient and safe distance from the locality of the blast. It is better always that the main wire should be of "insulated wire," which can be obtained at the rate of about five cents per foot or less. When naked wire is used, great care must be taken to keep it off from the wet ground, and away from all conducting substances of any kind. Insulated wire can be placed anywhere—on the ground, above it, or even under water—until it reaches the point of contact with the wire at the blast.

The difficulty of making a charge in the manner described, and arranging the platinum connection at every discharge, may be greatly simplified, by constructing beforehand a number of "fuses" or "charges" with platinum connections, as above described, in connection with a small quantity of powder of a better quality than that used for the bulk of the charge, so that the smallest spark may be sufficient to fire the same. With "fuses" so made, all the workman has to do after the hole is drilled, is to pour about half the bulk of his powder into the same; then put in the prepared fuse, pour in the balance of his charge, and proceed at once to tamp, taking care simply that the wires projecting from the fuse do not come in contact with each other. As soon as the charge is made, the wires of the fuse may be readily connected with the main wires, and they in turn with the battery, as will hereafter be shown. Such fuses may be made at a trifling cost—a few cents each. Fuses for this purpose are made and sold in England for less than one dollar per hundred. They could probably be imported and sold here for \$1.50 per hundred.

Different kinds of batteries are used—electro-magnetic, frictional, and various kinds of voltaic batteries. Probably the best, under all circumstances, is that known as "Grove's battery," which can be obtained for from three to four dollars per each cell, according to size. Three dollar cells are perhaps the most convenient for handling. For ordinary surface or tunnel blasting, from six to twelve cells are sufficient. For submarine, from twelve to eighteen may be advantageously employed. A simple framework and box for this battery can be made by any carpenter in a few hours. The manner of working and taking care of this battery can be learned thoroughly in a day. The cost of 400 feet of insulated wire—a great plenty for ordinary use—would be about \$10. Common galvanized iron or copper wire, not insulated, may be used, when proper care is taken to insulate, as in extending telegraph wires, and of course at a comparatively trifling cost. For six or eight blasts per day the cost of acids need not exceed three or four dollars per month. A battery will last for six months without any replenishment other than the addition of the acids employed. At the expiration of about six months, the zincs will require renewal at a cost of about seventy-five cents per cell. The balance of the battery will last, with ordinary care, for an indefinite length of time.

No person that is not well acquainted with the use of a galvanic battery ought to think of using one without some oral instruction, accompanied with practical demonstrations of the mode of its operation. Such instruction can be imparted in a day, so that any person of ordinary intelligence would have no difficulty with its use thereafter. The advantages of electric over ordinary blasting have already been placed before our readers. Much more might be added if we had space. We shall be happy to furnish any additional information to such of our readers or correspondents as may desire it.

LLOYD & STEWART'S NEW ANCHOR.—In this anchor, the two oval flukes and the bow connecting them are in one solid piece. The bow passes through the shank, and has a play of from forty to sixty degrees, limited by a shoulder on each side. A dove-tailed key holds it in place, and it can in a few minutes be unshipped, if necessary, and a duplicate bow adjusted. The flukes, of course, move together, and both hold at once. A slight twist of each, in opposite directions from the plane of the bow, something like the twist of a fish-hook, causes one of the two to take hold at once, when the hutt of the shank is raised by traction upon the cable, whichever side up the anchor may be lying; and the moment one catches, the other must immediately follow. The advantages claimed for this anchor are as follows: 1st, the necessity for the awkward stock or cross-piece of the old style is completely done away with; 2d, there is no possibility that the anchor can be "tripped" by becoming "fouled" with its own chain, the flukes presenting no angular points which might catch; 3d, it need not be as heavy as the old anchor, inasmuch as both flukes hold at once; and 4th, when hoisted to its place on the bow, it lies neatly against the side of the vessel, with no protruding stock to interfere with anything either upon its own deck or that of another vessel alongside. Messrs. Lloyd & Stewart are San Franciscans. They have applied for a patent through the agency of the MINING AND SCIENTIFIC PRESS.

THE TERMINAL CENTRAL PACIFIC RAILROAD CO., has recently been organized in this city, with a capital stock of four millions of dollars, for the purpose of constructing a railroad between Goat Island and Vallejo. The names of Alpheus Bull, R. B. Swain, R. E. Cole, J. Mora Moss, J. P. Flint, H. D. Bacon, W. H. L. Barnes, R. W. Kirkham, John Bensley, Alfred L. Tubbs, and Edward P. Flint, appear in the articles of association. The survey is already commenced. The plan is to cross the straits of Carquinez by a bridge, nearly 3,000 feet in length. For a time, however, a ferry-boat will be used. The distance from Goat Island to Sacramento is ninety miles. When this road is completed, the trip will be made in about three hours.



(Special Notice.)

## WESTERN LIFE INSURANCE.

[An extract from the *Lancashire Mail* and *Wall Street Review*, published in New York City, in January, 1867.]

Life Insurance, the crowning triumph of modern science and philanthropy, has, we are happy to state, joined and kept pace with the westward march of civilization and enterprise.

We had, at the recent Convention of Life Insurance companies in this city, the pleasure of renewing our acquaintance, began at the first Convention five years ago, with Secretary Kellogg, of the Northwestern Insurance Company, holding its headquarters at Milwaukee, Wisconsin, and were agreeably surprised to learn from him that this institution has already fifteen thousand members, assets approximating to two millions of dollars, and yearly receipts amounting to nearly a million. Having, from year to year, marked in the Massachusetts reports its rapid growth, we had regarded it, of all Life companies west of the seaboard cities, as the leading one, but were hardly prepared to find it rank so high among the strongest and foremost life institutions of America.

Upon a close investigation of the Northwestern's system, we are compelled to admit that its great success is founded on its superior and faithful management, the express object of which has been to render the interests of the members identical with those of the company, and never to suffer the corporate organization to become a distinct or opposite influence to that of the individual policy holder. It appears to have risen to the broad, generous, democratic platform of equal rights and privileges, and to recognize the great truth that each member of the company is the *bona fide* owner of his *pro rata* proportion of its assets, and entitled to treatment in accordance with the fact. The Northwestern, deeply impressed, and starting with this fundamental truth, that in a mutual company the members are the company, conceives that it has improved somewhat upon Eastern notions in this respect, and has, in order to fully realize its ideas of right, made, among others, the following provisions: That the association is purely mutual, managed on the policy-holders, by trustees elected by and from its own members, thus precluding the existence of conflicting or separate interests. Secondly, that as each policy-holder, if dissatisfied, is allowed to take his share of the funds—that is, receive at any time the surrender value of his policy and retire, the company retains no involuntary members.

The method, according to which its business is conducted, is what Mr. Wright terms the cash plan. For, though each member is allowed to pay all cash, or to give part note for his policy, whether it be large or small, the note is limited to the surrender value of the policy at the end of each year, so that if the note policy-holder resigns his membership at the conclusion of the term, he takes merely the same sum that would be paid to the cash member withdrawing, and thus the company, although it accepts notes, cannot be said, in any fair sense of the term, to do a credit business. With the Northwestern, the first payment on a term premium policy secures its proportion of that policy as effectually as any subsequent one, and all surplus is divided equitably among the policy-holders according to their respective contributions to such surplus. The dividends, after they are made, belong absolutely to the policy-holders, and are not forfeitable, as in most companies, by discontinuance of payment of regular premiums. These dividends are paid in cash, endorsed on notes, or applied to increase the policy, either temporarily or permanently.

A member may at any time borrow of the company the surrender value of the policy, which is his share of the funds, and thereby often save his policy from forfeiture; or, if the policy has been in existence some years, use the money in business, or for any other purpose in time of urgent need.

Many other provisions might be cited, but the preceding will suffice to show that the Northwestern is managed upon broad and enlightened principles, for the exclusive benefit of the policy-holders, their heirs and assigns.

Its location in the West, where capital is in demand at high rates, and where it is claimed that the rate of mortality is low, appears to have contributed not a little to the prosperity of this company. We are informed by the Secretary, that the dividend for 1867, upon life policies which have been in existence seven years, will reach as high as fifty-four per cent., and upon those in force for three years, will run up to nearly fifty per cent.

Flourishing as its present condition appears, the Northwestern's prospect for future years is still brighter, and we trust it will be fully realized, for its triumph is the triumph of good will to mankind and of benevolent providence exercised in behalf of the widow and orphan, the bereaved and desolate, who have most need of aid, comfort and protection.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

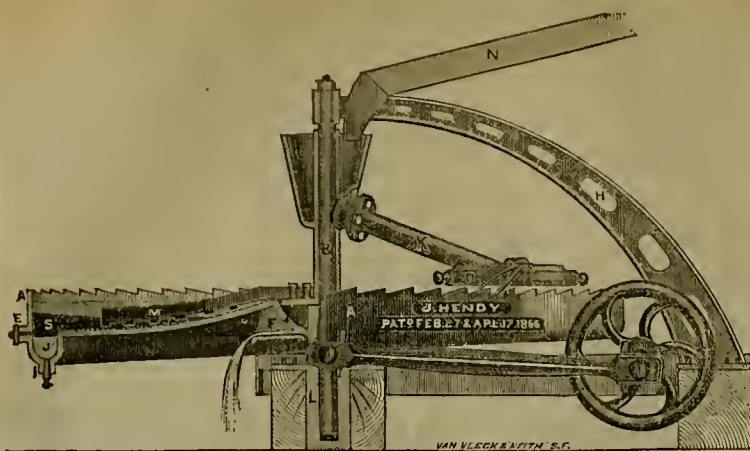


FIG. 1.

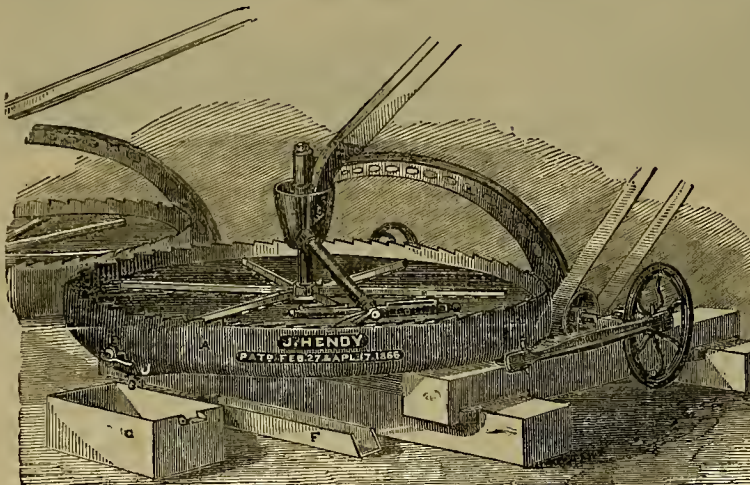


FIG. 2.

## FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

Fig. 1 is a sectional view. H is the support for upper end of shaft, marked B; L is the step; C, the hopper, in which the tailings are thrown; the tailings flow down the arm, K, then distribute at the Distributor, marked D. The tailings enter the pan, A, at its periphery, and the debris discharges near its center, and passes off in the spout, F. The sulphurets discharge at gate E; amalgam and quicksilver at plug I. J is a descending channel, for forcing the sulphurets, amalgam and quicksilver to their respective points of discharge; S is the sulphurets; M, the stirrers, with copper plate coated with mercury. The rotating of the stirrers prevents the sands from packing near the center of the pan, where the motion is diminishing. The pan, A, shows a curvilinear bottom, which gives a more precipitous descent near its center, for the purpose of forcing the sulphurets towards the periphery. It will be noticed that the centrifugal force and motion diminishes towards the center of the pan, for which reason the inclination is increased for the purpose above mentioned.

Upon the under side of the distributor are small openings or perforations, through which the pulp is dropped from the feeder into the pan.

The stirrers, marked M, and distributor, D, is made to sweep slowly around by means of the ratchet teeth upon the upper edge of the pan, in which two pawls are seen to work. This motion is obtained from the vibrating action of the pan. These pans can be so connected, as in Fig. 2, that two can be driven by one shaft and pulley.

The revolving stirrers and rotary distributor can be easily attached to Hendy's old Concentrators, and at a small expense.

These machines have been thoroughly tested, and pronounced a perfect success.

The proprietor of this Concentrator feels satisfied that it has no equal in use. It is designed for saving finely divided Quicksilver, Amalgam and Gold from the sands, and for concentrating and saving the Sulphurets, and is to be placed behind any and all other machines in use. Any person of ordinary experience with Quartz Mills can readily fit them up and run them.

The principle upon which HENDY'S PATENT CONCENTRATOR is constructed, is the only true and mechanical one for the purpose of concentration.

## CENTRIFUGAL FORCE AND GRAVITATION,

Combined as they are in this machine, CANNOT FAIL TO ACCOMPLISH the object sought.

Many certificates from proprietors of mills, who have this Concentrator in use, can be had, if required, giving the most flattering accounts of its efficiency.

A most substantial evidence of its worth is the fact that the proprietor is receiving repeated orders from those who are using them, and who have tested their merits.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit. THEY ARE WARRANTED TO WORK SATISFACTORILY.

## Directions for Operating Hendy's Concentrator.

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:

FIRST—Set the Pan, A, level, by its inner rim.

SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 1, marked S.]

THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.

FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

## CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,

Union or Fulton Foundry, San Francisco.

Feb. 1st, 1867.

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Corner of Montgomery and Bush Streets.

CAPITAL STOCK, - - - \$500,000

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Orders will be received at the office only for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed. 9v143m

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"YACHT HENRIETTA,"  
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For Mining, Shipping, Ferry,  
AND GENERAL PURPOSES.

Office—412 Clay Street, Works—North Beach.

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hempen rope.

We manufacture of all sizes, and in any length—  
Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—  
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Steel Ferry Ropes—For wide streams, Ferry Blocks supplied.

Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{1}{4}$  inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

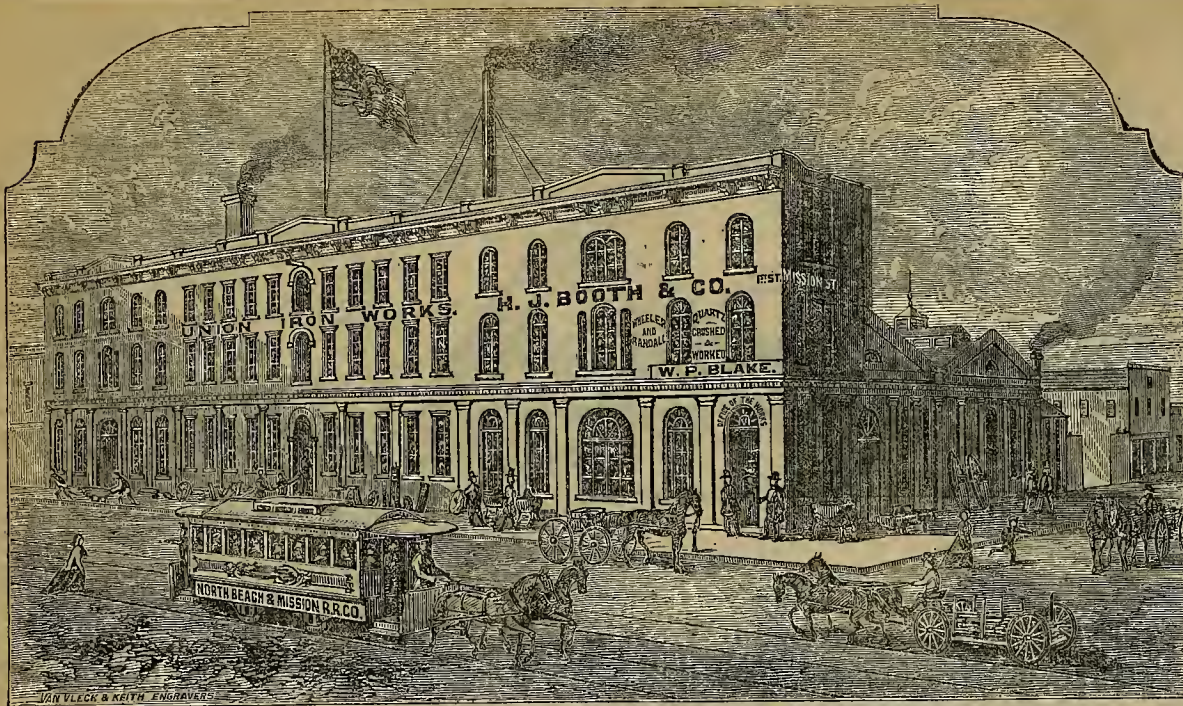
Compare Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hempen Rope, and Chain.

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<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>		<i>tons.</i>	
2 53	1 33	5 100	$\frac{1}{2}$	266	7 2,300
2 83	2 55	6 130	$\frac{3}{4}$	341	11 3,700
3 170	2 91	8 236	$\frac{1}{2}$	533	19 6,300

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Russia Iron Sereens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

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Superior for working either Gold or Silver Ores.Genuine White Iron Stamp Shoes and Dies  
Having been engaged for the past eight years in quartz  
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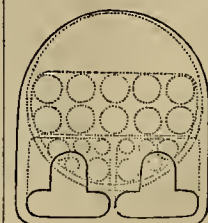
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224\*

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[OVER SAN FRANCISCO BATHS]  
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Are the best made in the city. An examination of their  
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Association of Artists. Remember the place, 611 Clay  
street. 1v13-4m

**DR. A. HARTMAN,**  
Electro-Magnetic Physician,  
CURES ALL CURABLE DISEASES, BY THE CON-  
centration of the vital forces, Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
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tention at the rooms. They will speak for themselves. The  
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rooms, 410 Kearny street, between Pine and California.  
2v13-3m

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**ANALYTICAL LABORATORY,**  
And Establishment for the manufacture of Pure Re-agents,  
**Pharmaceutical Preparations,**  
And all CHEMICALS used in the Arts. They are prepared  
to make Chemical investigations,  
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Of every description, and to give advice upon all matters  
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Metallurgists and Mining Engineers

**AUSTIN, NEVADA.**  
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**G. W. MAYNARD, J. H. TIEMANN,**  
**MAYNARD & TIEMANN,**  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
1v12-1y

**EUROPEAN**  
**METALLURGICAL WORKS,**  
—AND—  
Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphur, pyrites, and the (so-called) "rebel-  
lous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, roasting by calcination, done at moderate rates.

**PRACTICAL MINING SCHOOL.**  
The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting, re-  
fining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.  
S. P. KIMBALL, J. R. MURPHY,  
1v10-1t

**MOSHEIMER'S**  
**Metallurgic Works**  
And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.  
Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.  
Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.  
Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurates.  
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**J. MOSHEIMER,**  
25v13-3m Engineer and Metallurgist.

**Pacific Mail Steamship Co's**  
**THROUGH LINE TO NEW YORK,**  
Carrying the United States Mail.

LEAVE POLSON STREET WHARF, AT 11  
o'clock A. M. of the following dates, for  
PANAMA, connecting via Panama Railroad, with one of  
the Company's splendid steamers from ASPINWALL for  
NEW YORK.  
On the 10th, 18th and 30th of each month that has  
30 days.  
On the 10th, 18th and 30th of each month that has  
31 days.  
When the 10th, 18th and 30th fall on Sunday, they  
will leave on Saturday preceding; when the 18th falls on Sun-  
day, they will leave on Monday following.  
Steamer leaving San Francisco on the 10th touches at  
Manzanillo. All touch at Acapulco.  
Departures of 18th or 19th connect with French Trans-  
Atlantic Co.'s steamer for St. Nazaire, and English steamer  
for South America.  
Departure of 10th connects with English steamer for  
Southampton, and P. R. R. Co.'s steamer for Central  
America.  
Departure of the 30th connects with English steamer for  
Lima, the port of the new mines.  
The following Steamships will be dispatched on dates as  
given below:  
March 8th—SACRAMENTO, Capt. J. M. Cavarly,  
Connecting with HENRY CHAUNCEY, Capt. Gray.  
March 19th—CONSTITUTION, Capt. W. F. Lapidge,  
Connecting with PANAMA, Capt. Maury.  
March 30th—COLDEN AGE, Capt. Jas. T. Watkins,  
Connecting with the RISING STAR, Capt. Furber.  
Cabin passengers berthed through. Baggage checked  
through—100 pounds allowed each adult.  
An experienced Surgeon on board. Medicine and attend-  
ance free.  
These steamers will positively sail at 11 o'clock. Passen-  
gers are requested to have their baggage on board before 10  
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Through Tickets for Liverpool by the Inman Line, can be  
obtained at office, P. M. S. S. Co., San Francisco.  
For Merchandise and Freight apply to Messrs. WELLS,  
FAROE & CO.  
The splendid steamship COLORADO will be dis-  
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For passage and all other information, apply at the Pa-  
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15v12-3m SAN FRANCISCO.

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**MARBLE WORKS,**  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Monuments, Tombs, Plumber's Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Burial Caskets and Cases.  
1v1

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MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
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Stamps, Dies and Die Sinking, Embossing Stamps. Repair-  
ing of machinery promptly attended to.  
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Manufactured in Philadelphia, Penn.  
**JARVIS JEWETT, AGENT.**  
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SOLE MANUFACTURERS OF THE CELEBRATED  
**H. & L. AXLE GREASE,**  
Natoma Street and North Beach,  
SAN FRANCISCO.  
2v13-3m

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ALL SIZES.  
**SUCTION HOSE MADE TO ORDER**  
At short notice, by

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SAN FRANCISCO.  
1v13-3m

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Lower Rates  
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Manufacturer of  
**PATTERNS AND MODELS,**  
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**LOOKING-GLASS**  
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Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
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Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
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Southeast Cor. Stockton and Geary sts.

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and Metallurgy.

**THOMAS PRICE,**  
Professor of Chemistry,  
(Formerly of the Normal College, Swansea.)

WILL GIVE PRACTICAL INSTRUCTIONS IN QUALI-  
tative and Quantitative Analysis and Assaying. The  
course qualifies students for the application of Chemistry  
to METALLURGY, MANUFACTURING ARTS, and MINING  
PURPOSES.  
PHARMACEUTICAL and TECHNICAL CHEMISTRY,  
as is required by Medical and Pharmaceutical Stu-  
dents, will be taught to such students as may require it.  
Course of General Chemistry.

Evening Lectures will be delivered every Tuesday, at  
half past seven o'clock, P. M., in the Philosophical Hall of  
the College, without extra charge to the students in the In-  
stitution.  
On and after the 14th of February, the Laboratories will  
be open every day, except Sundays, from 8 A. M. to 5 P. M.  
For further particulars, address

**REV. P. V. VEDER,**  
Principal of the City College.  
Or at 406 California Street.  
6v12-2wtf

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on application at the office.  
**DEVEX & CO., Publishers.**  
505 Clay street, corner Sansome, San Francisco.

## New Mining Advertisements.

**Big Blue Lead Gold and Silver Mining Com-**  
pany, Cove District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the nineteenth day of  
February, 1867, an assessment of five dollars per share was  
levied upon the capital stock of said Company, payable  
March fourteenth, 1867, in United States gold and silver  
coin, to the Secretary, at his office, No. 302 Montgomery  
street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the second day of April, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Tuesday, the twenty-third day of April, 1867,  
to pay the delinquent assessment, together with costs of  
advertising and expenses of sale. By order of the Board  
of Trustees.  
M. C. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. n12

**Cherokee Flat Blue Gravel Mining Company,**  
Cherokee Flat, near Oroville, Butte County, California.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
twenty-fourth day of January, 1867, the several amounts  
set opposite the names of the respective shareholders, as  
follows:

Names.	No. Certificate.	No. shares.	Amount.
Mrs N. Gorman.....	not issued	2	\$20 00
J. H. Wilcox.....	27	8	40 00
Mrs E. Clark.....	27	3	15 00
E. R. West.....	23	3	15 00
Henry Poppe.....	16	7	35 00
Hedley Knight.....	not issued	10	50 00
Ernest Poppe.....	20	5	25 00
W. H. Rhodes.....	11	16	80 00
S. B. Straus.....	22	3	15 00
A. S. Randall.....	19	5	25 00
P. C. Heringer.....	not issued	5	25 00
Mrs M. A. Willis.....	not issued	1	5 00
Edward Hunt.....	8	10	50 00
E. W. Smith.....	5	7	35 00
Miss S. Bryant.....	not issued	1	5 00
Pascal Loums.....	not issued	1	5 00
L. Schmidt.....	not issued	2	10 00
J. Behrens.....	not issued	5	25 00
J. P. Flint.....	not issued	5	25 00
J. N. Sanford.....	4	8	40 00
W. Buck.....	not issued	16	75 00
G. A. Jones.....	not issued	2	10 00
G. S. Stillman.....	not issued	7	35 00
Miss A. B. Shattuck.....	not issued	1	5 00
E. P. Flint.....	not issued	1	5 00
T. B. Howard.....	3	4	20 00
J. de la Montagne.....	not issued	4	20 00
J. T. Swift.....	not issued	4	20 00
H. Meheis.....	not issued	4	20 00
O. W. Bell.....	not issued	3	15 00

And in accordance with law, and an order of the Board  
of Trustees, made on the twenty-fourth day of January,  
1867, so many shares of each parcel of said stock as may  
be necessary, will be sold at public auction, by Maurice  
Dore & Co., at their salesrooms, No. 327 Montgomery street,  
San Francisco, California, on the eighteenth day of March,  
1867, at the hour of 12 o'clock M. of said day, to pay said  
delinquent assessment thereon, together with costs of ad-  
vertising and expenses of sale.

A. DE SENAHLAC, Secretary.  
Office, southeast corner of Jackson and Montgomery  
streets, (up stairs) San Francisco, Cal. n12

**Hope Gravel Mining Company.**—Location of  
Works and Property: Grass Valley, Nevada County, Cal-  
ifornia.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-fifth day of  
February, 1867, an assessment (No. 13) of one dollar (\$1) per  
share was levied upon the capital stock of said Company,  
payable immediately in gold coin of the United States, to  
the Secretary, at the office of the Company, No. 523 Clay  
street, San Francisco.  
Any stock upon which said assessment shall remain unpaid  
on Wednesday, the third day of April, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the twenty-second day of April, 1867,  
to pay the delinquent assessment, together with costs of  
advertising and expenses of sale. By order of the Board  
of Trustees.  
DAVID WILDER, Secretary.  
Office, No. 523 Clay street, corner of Leidesdorff street,  
San Francisco, Cal. n12-5w

**Nuestra Señora de Guadalupe Silver Mining**  
Company, Tayoltita District, Durango, Mexico.

The Annual general Meeting of said Company, for the  
election of Trustees for the ensuing year, will be held on  
MONDAY, the fourth day of March, 1867, at 8 o'clock  
P. M., at the office, No. 210 Post street, San Francisco.  
Proxies must be in writing, and ten cents stamp affixed.  
mar2-1t E. J. PFEIFFER, Secretary.

**San Marcel Silver Mining Company.**—Loca-  
tion of Works: San Marcel, District of Hermosillo, State  
of Sonora, Mexico.

Notice is hereby given, that the Annual Meeting of the  
shareholders of the above named Company, will be held on  
TUESDAY, the eighteenth day of March, 1867, at 7½  
o'clock P. M. of that day, at the office of the Company, No.  
331 Montgomery street, San Francisco, for the election of  
Trustees to serve the ensuing year, and for the transaction  
of other business.  
R. N. VAN BRUNT, Secretary.  
Office, 321 Montgomery street, San Francisco. n12



**Yosemite Mining Company, Oro Fino District, Humboldt County, Nevada.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-sixth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. M. Hurd.	19	20	\$50 00
N. M. Hurd.	21	20	50 00
Fred. Hurd.	23	20	50 00
Joe. Hurd.	25	20	50 00
Joe. Hurd.	27	20	50 00
Joe. Hurd.	29	20	50 00
Joe. Hurd.	31	20	50 00
Joe. Hurd.	33	20	50 00
Joe. Hurd.	35	20	50 00
Joe. Hurd.	37	20	50 00
Joe. Hurd.	39	20	50 00
Joe. Hurd.	41	20	50 00
Joe. Hurd.	43	20	50 00
Joe. Hurd.	45	20	50 00
Joe. Hurd.	47	20	50 00
Joe. Hurd.	49	20	50 00
Joe. Hurd.	51	20	50 00
Joe. Hurd.	53	20	50 00
Joe. Hurd.	55	20	50 00
Joe. Hurd.	57	20	50 00
Joe. Hurd.	59	20	50 00
Joe. Hurd.	61	20	50 00
Joe. Hurd.	63	20	50 00
Joe. Hurd.	65	20	50 00
Joe. Hurd.	67	20	50 00
Joe. Hurd.	69	20	50 00
Joe. Hurd.	71	20	50 00
Joe. Hurd.	73	20	50 00
Joe. Hurd.	75	20	50 00
Joe. Hurd.	77	20	50 00
Joe. Hurd.	79	20	50 00
Joe. Hurd.	81	20	50 00
Joe. Hurd.	83	20	50 00
Joe. Hurd.	85	20	50 00
Joe. Hurd.	87	20	50 00
Joe. Hurd.	89	20	50 00
Joe. Hurd.	91	20	50 00
Joe. Hurd.	93	20	50 00
Joe. Hurd.	95	20	50 00
Joe. Hurd.	97	20	50 00
Joe. Hurd.	99	20	50 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-sixth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of Jones & Bendixson, No. 22 California street, San Francisco, on Saturday, the twenty-third day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessments, together with costs of advertising and expenses of sale.

R. O. PUTNAM, Secretary.

Office, N. E. corner Front and Jackson streets. feb2

**Mining Notices—Continued.****Arizona Consolidated Mining Company, Yuma District, Arizona Territory.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Boddy.	1	20	\$50 00
Z. H. Boddy.	2	20	50 00
Simon Boddy.	3	20	50 00
John Boddy.	4	20	50 00
W. J. Miller.	5	20	50 00
M. P. Austin.	6	20	50 00
Willard Hodges.	7	20	50 00
Albert Knapp.	8	20	50 00
M. Kershaw.	9	20	50 00
Mary Austin.	10	20	50 00
Mary C. Leonard.	11	20	50 00
E. C. Clouse.	12	20	50 00
J. P. Bartlett.	13	20	50 00
N. Benson.	14	20	50 00
Lacey Benson.	15	20	50 00
H. H. Harrison.	16	20	50 00
J. H. Harrison.	17	20	50 00
James Pullman.	18	20	50 00
Jesse Jewell.	19	20	50 00
J. J. Scutcher.	20	20	50 00
Chas. Bunnemann.	21	20	50 00
Wm. H. Heywood.	22	20	50 00
Sam. A. Gordon.	23	20	50 00
S. H. Harkness.	24	20	50 00

And in accordance with law, and an order of the Board of Trustees, made on the sixteenth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the fourth day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

G. W. HUNNELL, Secretary.

Office, No. 611 Clay street, San Francisco. feb6

**Caution!**

**Cosima Silver Mining Company.**—The following Certificates of Shares in the Capital Stock of the above named Company, were sold to pay delinquent assessment and expenses of advertisement and sale, on the eleventh day of February, 1867, at the auction rooms of Maurice Dore & Co., 331 Montgomery street, San Francisco, at twelve o'clock, noon:

In name of.	No. Certificate.	No. Shares.
P. J. Bragan.	666	25
James Laddley.	662	25
James Laddley.	663	133
James Laddley.	664	133
J. D. Thompson.	655	25

Parties are hereby cautioned against purchasing the above described Certificates of Stock.

CHAS. RAUM, Secretary.

Office, No. 540 Battery street, opposite the Custom House, San Francisco, Cal. feb14

**Cumargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1867, an assessment of twenty dollars per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, 402 Front Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. feb16

**Chilpaneca Mining Company—District of Ures, Sonora, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of January, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 316 California street, (up stairs) San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 316 California street, San Francisco. Cal. feb2

**Chalk Mountain Blue Gravel Company.—Location of Works: Nevada County, California.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. C. Lomb.	15	10	\$150 00
Isaac Swain.	16	25	150 00
Martha White.	17	25	200 00
S. B. Whipple.	18	25	75 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of Messrs. Olney & Co., at No. 418 Montgomery street, San Francisco, California, on Saturday, the ninth day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, No. 5 Government House, corner Washington and Sansone streets, San Francisco, California. feb23

**Diamond Copper Mining Company. Location: Rockland District, Del Norte County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of February, 1867, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, Room No. 33 Montgomery Block, San Francisco, or to ROY B. RANDALL, the Company's Superintendent, at Crescent City, Del Norte County, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the ninth day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, Room No. 33 Montgomery Block, corner of Montgomery and Washington streets, San Francisco, Cal. feb9

**Emilia Mining Company, State of Guerrero, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of February, 1867, an assessment of seventy-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, Room No. 1 Crim House, No. 523 Kearny street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.

Office, Room No. 1 Crim House, No. 523 Kearny street, San Francisco, Cal.

N. B.—The above assessment is levied in place of the assessment levied October 20th, 1865, which was revoked at a meeting of the Board of Trustees, held February 20th, 1867. All stockholders who have paid on the said assessment levied October 20th, 1865, will be credited the amount so paid on the assessment of February 20th, 1867. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.

**Evcon Consolidated Copper Mining Company.**

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fourteenth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	Number of Certificate.	Number of Shares.	Amount.
Wm. M. Rider.	4	12	\$3 00
P. B. Cornwell.	143	10	\$2 50
P. B. Cornwell.	144	10	\$2 50
P. B. Cornwell.	145	10	\$2 50
P. B. Cornwell.	146	10	\$2 50
P. B. Cornwell.	147	10	\$2 50
P. B. Cornwell.	148	10	\$2 50
J. L. Moody.	115	112	\$28 00
J. L. Moody.	116	112	\$28 00
R. G. Rogers.	136	112	\$28 00
R. G. Rogers.	137	112	\$28 00
H. D. Oliphant.	199	112	\$28 00
H. D. Oliphant.	200	112	\$28 00
J. B. Baker.	151	85	\$21 25
W. B. Baker.	152	50	\$12 50
D. R. Beekford.	204	20	\$5 00
A. Howes.	194	5	\$1 25
M. C. Olmstead.	133	3	\$7 50
E. Barnes.	133	15	\$3 75
Chas. Yeomans.	184	36	\$9 00
Chas. Yeomans.	185	20	\$5 00
Chas. Yeomans.	201	50	\$12 50
Chas. Yeomans.	191	50	\$12 50
A. E. O'Neill.	109	12	\$3 00
A. E. O'Neill.	110	10	\$2 50
J. C. O'Neill.	111	10	\$2 50
E. R. Holmes.	129	25	\$6 25
E. R. Holmes.	123	25	\$6 25
G. B. McAneny.	171	12	\$3 00
R. J. Vandewater.	67	12	\$3 00
R. J. Vandewater.	68	12	\$3 00
R. J. Vandewater.	69	50	\$12 50
B. Wilcocks.	26	25	\$6 25
H. B. Osborn.	230	50	\$12 50

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Messrs. Olney & Co., at No. 418 Montgomery street, San Francisco, Cal., on the thirteenth day of March, 1867, at the hour of 2 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. S. CLYDE, Secretary.

Office of Company, No. 532 Merchants street, Room No. 3, San Francisco, California. feb3

**George Washington Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, Cal.**

Assessment No. 77.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of February, 1867, an assessment of three dollars and fifty cents (\$3.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth day of March, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.

Office, 233 Montgomery street, San Francisco. feb9

**Julia Gold and Silver Mining Company, Storey County, Nevada.**

Notice.—There are delinquent, upon the following described stock on account of assessment levied on the tenth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Capron, P.	29	50	\$50 00
Botardo, J.	181, 182, 25-ca	50	50 00
Lansweert, L.	37	20	20 00
M. J. McLaughlin.	155, 156, 25-ca	50	50 00
Whipple, J.	39	20	10 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Maurice Dore & Co., No. 331 Montgomery street, San Francisco, California, on the sixth day of March, 1867, at the hour of 2 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. NOEL, Secretary.

Office, 607 Washington street, San Francisco, Cal. feb16

**Postponements and Alterations.**—Secretaries are requested to give notice of postponements, or alterations which they may desire made in their advertisements at their earliest convenience. New advertisements should be sent in as early as possible.

**Kern River Gold and Silver Mining Company, Kern District, Kern County, California.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the third day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. Staples.	37	30	\$30 00
F. H. Staples.	32	30	30 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the Company's office, No. 312 Montgomery street, San Francisco, Cal., on the twelfth day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.

Office, No. 312 Montgomery street, San Francisco. feb3

**Libertad Gold and Silver Mining Company, District of Ures, Sonora, Mexico.**

The stockholders of the above-named Company, are notified to attend the Annual Meeting thereof, which will be held in the Fourth District Court Room, City Hall, on WEDNESDAY EVENING, March 6th, 1867, at 7½ o'clock.

LAWRENCE C. OWEN, Secretary.

**Lady Bell Copper Mining Company, Low Divide Mining District, Del Norte County, California.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J. Y. Ayers.	96	25	\$2 50
Francis Chummins.	135	10	1 00
D. M. Henderson.	343	50	6 25
D. M. Henderson.	344	50	6 25
D. M. Henderson.	346	25	2 50
D. F. Richards.	255	60	6 00
D. F. Richards.	259	50	5 00
D. F. Richards.	240	50	5 00
D. F. Richards.	241	100	10 00
B. Austin.	358	50	5 00
Joe L. Varnum.	302	5	50

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 331 Montgomery street, San Francisco, Cal., on Monday, the fourth day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

C. HEYWOOD, Secretary.

Office, 311 Market street, San Francisco, Cal. feb3

**Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of February, 1867, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth (29th) day of March, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eleventh day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.

Office, 331 Montgomery street, San Francisco. feb16

**North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Hugh Whittell	265	12	\$150 00
Hugh Whittell	266	50	625 00
Michael O'Neil	262	2	25 00
Nath'l Page	233	10	125 00
Nath'l Page	234	4	50 00
Nath'l Page	235	10	125 00
Nath'l Page	236	10	125 00
Nath'l Page	237	5	62 50
Nath'l Page	238	5	62 50
Nath'l Page	239	5	62 50
Nath'l Page	240	5	62 50
J. B. Palmer	230	100	1250 00
F. P. Strother	236	5	62 50
Wm. L. Upton	237	5	62 50
Wm. L. Upton	238	5	62 50
Wm. L. Upton	239	10	125 00
Wm. L. Upton	230	10	125 00
Wm. L. Upton	233	20	250 00
Wm. L. Upton	239	5	62 50
Wm. L. Upton	243	5	62 50



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.

Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 5v13f

# HUNTER'S IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ore on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

# VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture mid between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with the quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
PACIFIC FOUNDRY,  
1v1 San Francisco.

# Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,  
For Feeding Boilers.

STODDART'S IRON WORKS,  
Beale Street, San Francisco.  
23v12-3m



# STANDARD SOAP COMPANY'S WASHING POWDER.

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12q

# Brown's Filtering Heater!

FOR PREVENTING INCrustation IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to 5v14-y AUSTIN A. WELLS, Agent.

# BLAKE'S QUARTZ BREAKER! PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,  
Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

Notice to Miners,  
Well-Borers and Water Companies.

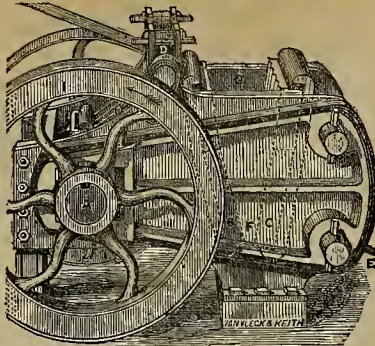
M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Air-Driven Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,  
5v13-ly Stove Store, No. 125 Clay street, below Davis.

# Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

# Gold and Silver Ores.

BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.

The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1.—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2.—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....850  
No. 3.—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tehuacum county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tehuacum county:

RAWHIDE RANCH, Tehuacum Co., Sept. 25, 1866.  
JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,  
Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATOR BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be reduced to the sum of \$100 per barrel.

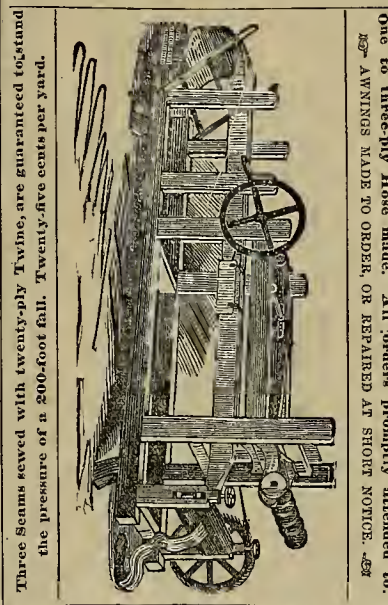
A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866.

BRODIE & RADCLIFF,  
Express Building, 402 Montgomery street, San Francisco.

# PATENT HYDRAULIC HOSE SEWING By S. HOWARD,



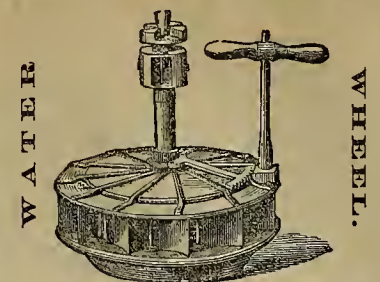
No. 326 DAVIS STREET, San Francisco.

22v13-3m

# STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shaves and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation daily, at the San Francisco Foundry, Fremont street, up stairs. Also, manufacture Ores, in lots not exceeding 2,000 pounds, tested by 2v13 G. W. STRONG, Assayer.

# LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALLED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than fifty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular to

KNAPP & GRANT,  
Agents for California,  
25v13-ly 310 Washington street, San Francisco

# BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

# PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1865.

THESE FURNACES ARE NOW MANUFACTURED AFTER an Improved mode of construction, which

GREATLY SIMPLIFIES THEIR OPERATION,

and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

# THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market street, San Francisco.

# To Quartz Miners and Others.

# NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

# HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tallings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for.

1v14-3m JAMES HITCHENS.

SEND FOR FREE CIRCULAR AND CONFIDENTIAL ADVICE.

# Mining and Scientific Press PATENT AGENCY.

# DEWEY & CO.,

SOLICITORS OF

# American and Foreign Patents,

505 Clay Street, corner Sansome,  
SAN FRANCISCO.

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COPIES OF PATENT PAPERS,

Issued by the United States or Foreign Countries, procured in the shortest time possible.

ENGRAVINGS FINELY EXECUTED.

Our Patent Agency.

THE PATENT AGENCY OF THE MINING AND SCIENTIFIC PRESS has been signalized with remarkable success during the past two years. The importance to the inventive genius of this coast of a thorough and reliable agency for the solicitation of LETTERS PATENT from the United States and foreign Governments cannot be over-rated, and the Proprietors of the Press, feeling the responsibility which rests upon them, and the reward which must follow the faithful performance of their trusts, will take care to afford inventors every advantage to be secured to them through a competent and responsible agency upon this coast.

# STOCK CERTIFICATES, STOCK TRANSFER JOURNALS, STOCK LEDGERS, ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press.

INSECTS.—How gorgeously many insects are dressed. All the splendors of the rainbow are theirs. Solomon, in his search for wisdom studied them with much care, and is said to have written a book about them, which, however, is lost. He said kings in all their glory failed to outshine them! They have gold, silver, copper, iron and brass for coats of mail. Diamonds form their eyes! Some insects look through a thousand diamonds. Many can see further than animals; they can also look in many directions at the same time, and see many diverse objects at once; so as to command a ready view of their enemies, or seek with greater facility for fruits, flowers or food. Their flight almost exceeds belief. It is said that a house fly can make sixty miles an hour, and sustain that speed for a great length of time.

Who has not seen that familiar insect disporting himself in the vacancy of a quiet room. See it as it darts with a rapidity which the eye fails to follow. How rapid and eccentric are its motions. What a power of muscle must it possess, to continue its little wings in such rapid and long continued motion. The libellula, at a speed of forty miles an hour, can stop its flight and turn in a space of less than six inches! The honey bee is supposed to see its objects at a distance of several miles—while its velocity cannot be less than forty miles per hour. No mathematician can draw a right line more direct than the "bee line" this insect makes when he seeks his home. The muscular force of the flea has been often spoken of. Insects, if made as large as men, would soon become masters of the world.

AN INGENIOUS FIRE ALARM.—The French journals describe a new apparatus for this purpose, which is the invention of Houdin, the ex-necromancer. A metallic blade, copper on one side and steel on the other, made of two laminæ, soldered together by their surfaces, is fastened upright to a board. It is connected with one of the poles of a voltaic battery, and also with an alarm bell. A metallic knob, fastened to the board on the steel side of the blade, is connected with the other pole. Now whenever the blade is warned by any means, it bends towards the knob, owing to the greater expansiveness of the copper. If the heat be sufficient, it touches it. The circuit is thereby made complete, and the bell commences to ring, which it keeps up until the contact is interrupted. The sensitiveness of the apparatus may be diminished at pleasure by increasing the distance of the knob from the blade.

MINES AND RANCHES.—Mrs. Durfee recently located a ranch in Little York township, Nevada county. All the necessary steps were taken; the land was surveyed and recorded, but the miners combined to resist the claim. The case came up before the Commissioner at the land office in Marysville, and was decided in favor of the miners. This shows that miner's rights will be respected. All they have to do is to be on their guard and ready to prove that the land is worth more as mining than as agricultural land.

A WINDFALL.—Home, the spiritualist, was recently hard up and in great trouble. He was unwilling to sell the valuable presents which he has from time to time received; and his wife's property was in litigation. At this juncture, an old lady, who, although a stranger, had a great admiration for him as a medium, made him a present of some one hundred and twenty thousand dollars.

CURIOS CALCULATION.—If a cannon ball of the size of the earth were fired directly at the sun with the same velocity with which the earth now travels, and the fact telegraphed at the same moment, the inhabitants of the sun, if any they were, would get the news in five minutes. Two months afterwards, they would feel the "hit," and in about fifteen years, they would hear the explosion.



**TELEGRAPHING EXTRAORDINARY.**—On the night of January 31, the telegraphic operators at Chicago and Heart's Content, Newfoundland, a distance of 2,200 miles apart, were put in direct communication, when the following conversation took place:

Chicago to Heart's Content—Hello! shake hands. What is weather there? San Francisco line is down, or would you put him on—Indians at work.

Heart's Content to Chicago—Weather very cold; wind northeast, blowing gale. Cables asking for weather from you. What's your time? Ours is 1:25 A. M.

Chicago—You come well—cold here, no snow. Ours is 1:15 P. M.

Heart's Content—Valencia says: "Fine and frosty—time 5 A. M. The Anglo-American Company's staff grasp your hand." Also our staff—London fellows have gone to bed. Good morning.

Chicago—Wish I could go. Chicago and the West send greeting. Good morning.

**NOTE.**—When it was 1:25 in Heart's Content and 11:15 in Chicago, it was 11:60 in Buffalo.

Verily, the world moves!

**HONORABLE TRIBUTE.**—At the last annual meeting of the French Academy of Sciences, the Secretary, in his report of works thought worthy of prizes, made a very touching eulogy on the life and character of Lincoln, and announced that a prize would be offered for the best poem on the death of Abraham Lincoln, which should be presented during the coming year. The decision will be rendered in August next. This is the most celebrated institution of learning in the world. Even the Emperor himself, when he attends its sessions, must take a back seat, as he is as yet an unsuccessful candidate for membership.

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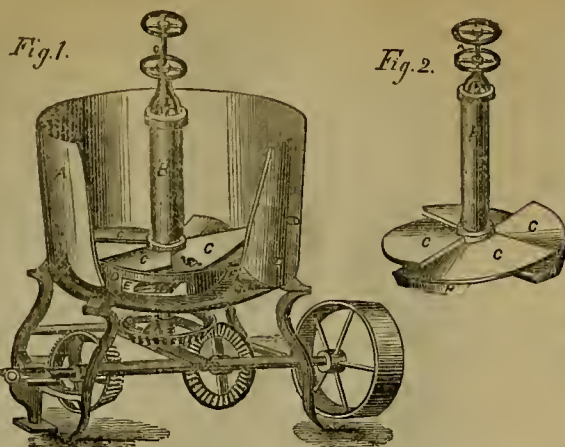
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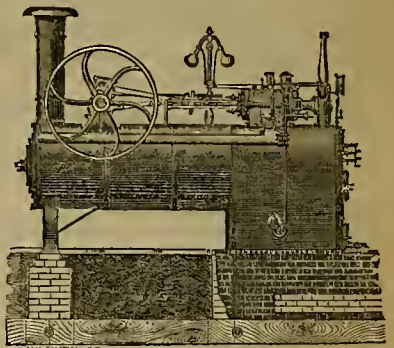
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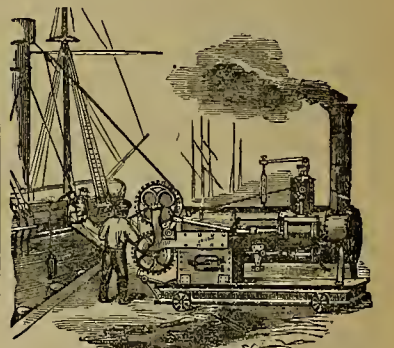
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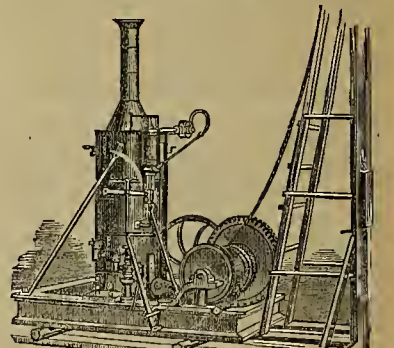
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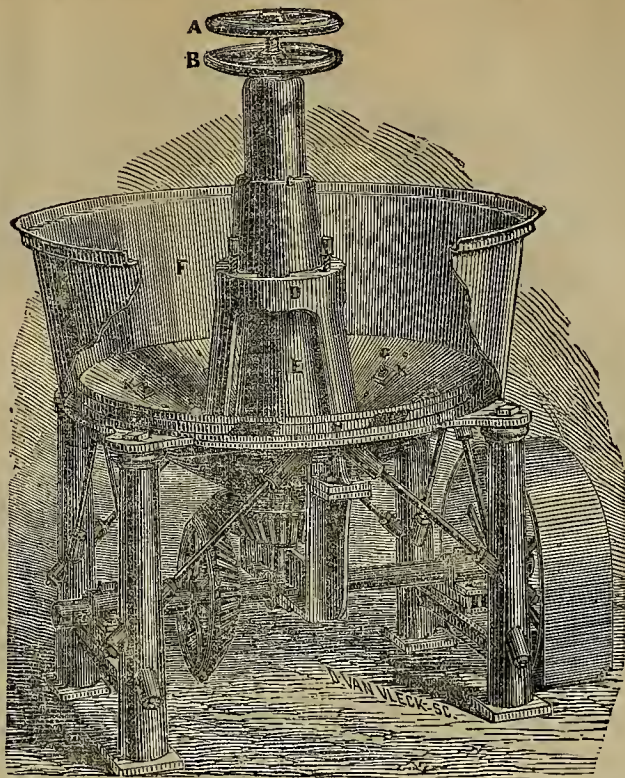
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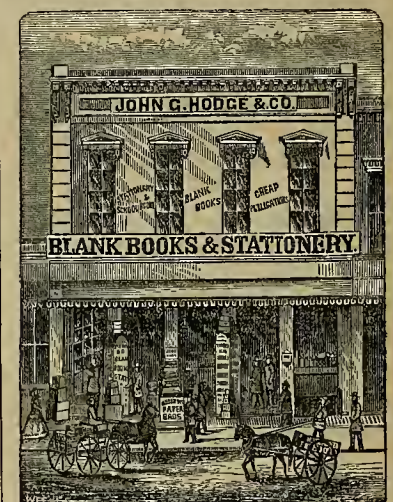
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SAN FRANCISCO, SATURDAY, MARCH 9, 1867.

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Number 10

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Female Labor in Machine Photography and Embalming;  
Shops. Sun spots caused by  
Bismuth Metal. Receipt for Planetary Influence; Speed  
College of California. of Electricity.  
Something New in Photo- Mining Summary—Embracing  
graphy. late Intelligence from the  
Flouring of Quicksilver. various counties and dis-  
Warner's Flour Packing Ma- tricts in California, Ariz-  
chine—Illus. on, British Columbia, Cen-  
U. S. Land Districts—Blank tral America, Idaho, Ne-  
Forms. vada.  
Ruto Tunnel Company. Mining Shareholders' Direc-  
Mechanics' Institute Election tory.  
Iron Shipbuilding in San Mining Stock Sales of the  
Francisco. Week.  
Geological Survey. San Francisco Market Rates.  
California Academy of Nat- San Francisco Weekly Stock  
ural Sciences. Circular.  
Stock Prices—Bid and Asked.

**MECHANICS' INSTITUTE.**—The following is the result of the annual election of officers, held at the rooms of the Association on Monday last:

REGULAR NOMINATIONS.		OPPOSITION NOMINATIONS.	
For President.		For President.	
G. E. Grayson.....	*199	N. P. Perrine.....	176
For Vice President.		For Vice President.	
J. M. Eckfeldt.....	*187	A. C. Austin.....	*193
For Recording Secretary.		For Recording Secretary.	
D. Edward Hayes.....	*190	J. H. Culver.....	*185
For Corresponding Secretary.		For Corresponding Secretary.	
H. D. Dunn.....	*373	H. D. Dunn.....	*373
For Treasurer.		For Treasurer.	
Thomas Young.....	*389	Thomas Young.....	*389
For Directors.		For Directors.	
Hiram Rosekrans.....	*247	Gardner Elliott.....	183
Joseph M. Gill.....	*228	J. P. Sheldon.....	150
James Spies.....	*210	T. J. Dixon.....	163
C. H. Harrison.....	*209	Samuel Smith.....	166
Samuel Tyler.....	159	M. Heverlin.....	140
George T. Bohlen.....	*352	George T. Bohlen.....	*352
W. C. Pease.....	*216	C. L. Tilden.....	*213
*Elected.			

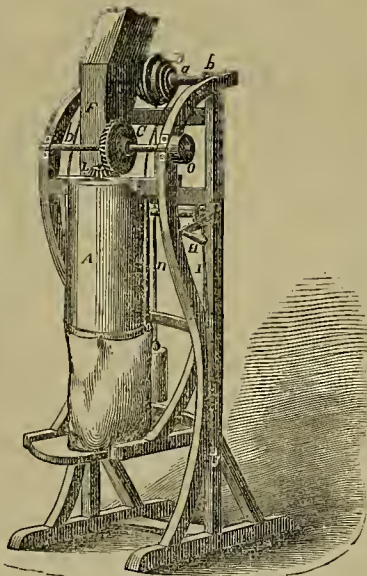
**ORE CONCENTRATORS.**—This class of machinery seems to be attracting more than usual attention. Mr. Belden, Superintendent of the Empire mill, at Grass Valley, after running Hendy's new concentrator ten days, has reported quite favorably of its operations. The proprietors of the Coney mill, Amador county, who have had a good deal of experience with Hendy's old machines, as well as with other concentrators, have just ordered another of Mr. Hendy's patent. The Pacific Foundry has this week shipped two of these machines for the Noyes mill, near Prescott, Arizona. Mr. Hendy has also further orders for two machines for the southern mines. It is claimed for these machines that they entirely do away with any necessity for sizing the particles of the ore before concentrating—an operation advocated by some parties.

**SUTRO TUNNEL COMPANY.**—The Trustees of the Savage company passed a resolution on the 7th instant, authorizing the President to subscribe \$150,000 to the stock of the company, subject to ratification by the stockholders at their next meeting. The subscriptions now stand thus: Empire company, \$15,000; Hale & Norcross, \$100,000; Gould & Curry, \$100,000; Savage, \$150,000; making a total of \$365,000. Eastern capitalists will soon see that those who are to be especially affected by the work are willing to venture money upon it.

## Warner's Flour Packing and Weighing Machine.

We give annexed an illustration of a new invention by Mr. G. A. Warner, of Portland, Oregon, designed for filling hags with flour or any fine material, and weighing it into equal quantities at the same time. The operation of the machine may be described as follows:

The hag or sack into which the flour is to be packed, is first placed around the lower part of the drain or cylinder, A, and secured in place by hooks, when a gate at the bottom of the hopper, E, located at L, is opened and held thus by a spring, not shown, while the flour is conveyed by a spiral conveyor or packer, into the sack at the bottom of the cylinder. This packer is worked horizontally within the cylinder, A, by the bevel gear, C, operated by a hand crank on the shaft, b; or power may be attached to the



pulley on the opposite extremity of the shaft. The flour, or other material to be packed, is fed in any proper manner, from a convenient receptacle through the hopper, F. By the action of the spiral packer, the material is compressed, as fast as delivered into the sack to any reasonable degree of closeness.

The platform on which the sack is seen to rest is elevated by the pulley and weight, D, at the commencement of the operation, to near the bottom of the cylinder, A; the sack at the same time being brought up around and upon the outside of the cylinder. By this arrangement, the filling and packing commences in the bottom of the sack, and progresses gradually; the sack, with the platform on which it rests, dropping as fast as the filling goes on. This is so arranged by weights and springs, that when any desired amount of material has been placed in the sack, an automatic action closes the gate at the bottom of the hopper, and prevents the ingress of any more material. The machine can be adjusted to any desired amount from twenty-five pounds upwards, to 200 or

more; the whole process of filling, packing, weighing and cutting off at the proper moment, being automatic in action, by the attendant merely turning the crank or shaft, b, or applying power to the pulley upon the same. The only attendance required is to place and secure the sack on the cylinder, as seen in the engraving, and to remove the same after being filled.

The invention appears to be a very useful and practical one. It is applicable to small grain, such as wheat, etc., as well as to flour and other pulverized material. It is extremely simple, light and does not appear to be particularly liable to get out of order. A working model of this machine may be seen in operation at the New England House, 205 Sansome street. As the inventor is about to proceed to the East in search for a larger field in which to operate than is presented on this coast, he will sell the right for California, Arizona and Nevada, either separate or together. For further particulars, address G. A. Warner, San Francisco.

## Iron Shipbuilding in San Francisco.

During the past week our attention has been called to something quite new in the mechanical enterprise of San Francisco. Mr. D. Cameron, proprietor of the Neptune Iron Works, corner of Mission and Fremont streets, has recently taken a contract for building three iron steamers of about 150 tons each. These steamers will be stern-wheel boats, driven by double engines of 75-horse power. Their dimensions will be seventy-five feet in length, sixteen feet in breadth of beam, and five feet depth of hold. They are being constructed of three-sixteenths iron, with 3-inch angle iron for their frames. The decks will be made of wood. The first of these boats is in a forward state of completion, and may be seen at Cameron's yard, on Fremont street, nearly opposite the Neptune Iron Works building. They are being constructed for the "Lake Chapala and Rio Grand Steam Navigation and Commercial Company," which has been organized to navigate Lake Chapala and the Rio Grande river.

The immediate purpose of the company is to put upon that lake the three steamers already contracted for, which will be used for towing barges from point to point on the lake and river, for a distance of about 100 miles. There is a large amount of transportation between Gaudalajara, some forty miles to the northwest of the lake, and the eastern shores of the same, about one hundred miles distant. The custom-house books of Gaudalajara show a through transportation of nearly 1,000 tons weekly, in addition to such goods as do not have to be entered, to say nothing of passengers. The present facilities for transportation there are of the rudest kind, and totally inadequate to the business offering.

The boats will be temporarily set up in this city, then taken apart and transported with their engines to the lake, where they will again be put up, the engines placed in position, the wood-work completed, and the boats delivered over to the company after a successful trial trip. The boats will connect with forty-ones miles of railroad from the lake to the city of Gaudalajara. Mr. Cameron has had considerable experience in

this branch of business in Scotland; having built several iron steamers on the Clyde, before coming to this city, with which place he has now permanently identified his fortune. Mr. C. is also building two sawmills for the same locality.

These orders are indicative of an important class of business, which the pacification of Mexico will open up to the advantage of this city. San Francisco, as we have often said, must become the great machine-shop of the entire Pacific coast of North America. Our facilities will soon be such as will effectually preclude the possibility of our being underbid by Eastern mechanics in any branch of business whatever, from making a hob-nail to constructing an iron steamship. The rolling mills on the Potrero will greatly add to our facilities in this direction. It will soon become absolutely necessary that we should not only roll our own iron, but produce it, too, from the mine. There is no reason why we should be indebted to the East for either the raw material or the manufactured article. The first rolling mill in San Francisco, and the first iron furnace in Oregon, will soon be in operation.

Iron boats, of the description of those being built by Mr. Cameron, would probably be found to answer better than wooden ones for the shallow streams of this State, such as the Feather, the upper Sacramento, and the Colorado rivers. These boats draw but eight inches of water, with their machinery on board, when light. The weight of the hull is about forty-five tons. After Mr. Cameron has fully demonstrated that such boats can be as readily built in this city as wooden ones, no doubt more attention will be directed to the superiority of iron over wood for ship-building, both for sailers and steamers.

**NEW TELEGRAPH COMPANY.**—The certificate of incorporation of the San Juan and San Bernardino Telegraph Company was filed in the County Court on March 6th. The company propose to erect a telegraph line from San Jose to San Bernardino via San Juan South, Paso Robles, Hot Springs, Santa Marguerita, San Luis Obispo, La Patera, Santa Barbara, San Buenaventura, Los Angeles, El Monte and San Bernardino, under a franchise granted to Benjamin Flint and J. S. Bigbee, by an act of the Legislature, passed at the last session. Capital stock, \$150,000, divided into 300 shares of \$500 each. Stockholders: W. E. Lovett, San Francisco; Austin Wiley, San Francisco; P. W. Murphy, Santa Marguerita; Thomas Flint, San Juan, and Walter Van Dyke, San Francisco.

**GEOLOGICAL SURVEY.**—A New York telegram, dated March 6th, says: Gen. Grant and the Secretaries of War and of the Treasury, are said to be much interested in the proposed geological survey between the Rocky Mountains and the Sierra Nevada. The expedition will be accompanied by an efficient military escort. The appropriation comes out of the War Department Fund. Mr. King will be chief of the geological party.



[Written for the Mining and Scientific Press.]

## What is a Practical Chemist?

BY E. PIQUE.

[Continued from Page 130.]

The disadvantages of the blast furnace are as follows:

*First*—We cannot treat in it pulverized substances, as they interfere with the action of the blast on the fuel. In some cases the pulverized substance has been formed into bricks or lumps, by mixing it with clay, moistening and drying it; but this is an additional labor, increases the bulk, and makes the mass more difficult of fusion.

*Second*—Some metals, when exposed to a strong blast and great heat, will be volatilized and consequently lost, since condensers could not conveniently be connected with the same. I know a company that put up blast furnaces in the mines for the purpose of extracting the gold from gold-bearing pyrites. They used large quantities of lead for collecting the gold; but after the operation was finished, the smelted mass contained neither gold nor lead, as both these metals had been evaporated and carried off by the blast.

*Third*—We have not so much control over the substance we are smelting, in a blast furnace as we have in a reverberatory furnace; since, in the latter, we can stir the mass when it is required, and we can occasionally add some other ingredients; or, when the hearth is slanting, we can introduce the mixture in small quantities, and watch the progress of the operation.

*Fourth*—It takes some kind of mechanical contrivance and a moving power to produce the blast; but this objection is of no consequence where steam power for other purposes is at hand. It is not my object to write a treatise on furnaces, but to point out some of the differences between working on a large or small scale. Another principal point is, that in small operations the object generally is to obtain a certain result, and as the quantities are small, we often use chemically pure materials, and we are regardless even of quantities, since the expense cannot amount to much—whether we take a trifle more or less. It is quite a different thing in working with large quantities, where the scientific object is not the only result, but *pecuniary gain*. We would, for instance, not hesitate to smelt half an ounce of a mineral with four times its weight of litharge, soda or other flux, to obtain a complete liquefaction; but we most assuredly would object to use the same proportions on a large scale, and it would appear ridiculous to smelt one ton of ore with four tons of litharge. Just as a man would appear not to be in his right mind, who would use chemically pure acids for dissolving metals by the ton, although for analysis and other small operations, they are necessary articles.

When, in my younger years, I studied chemistry, I made a beautiful green precipitate by mixing the solution of arsenic with a solution of crystallized acetate of copper. But, being afterwards engaged to superintend some chemical works, and having occasion to manufacture the above article on a large scale, I certainly did not dare to use such an expensive article as the crystallized acetate of copper, but was obliged to use the common verdigris that was made in France, in the shape of cannon balls, and which, being much cheaper, at the same time gives a much larger yield than the crystallized article; but I must say I experienced in the beginning considerable difficulty in using it, until I overcame the same by practical experience. Another instance is the different kinds of logwood, which is used in dyeing cotton, silk and other fabrics. These differ very much in price, and an experienced dyer will be able to produce the very best result with a common and cheap kind of logwood, while an unpractical man will be obliged to use the most expensive material.

Since the principal object of all operations, on a large scale, is to *make money*, I would call a practical chemist—one who, in some particular branch, is able to *produce the very best result at the smallest expense*. To do this, he must be able to work with the smallest quantity and the cheapest kind of material that will answer the purpose. For the same reason he must use the most appropriate tools, vessels, furnaces, etc., so as to save labor, fuel, and in fact to work with the greatest economy and dispatch. For instance, common sense will teach us that if anything has to be discharged, the discharging vessel ought to stand higher than the receiving vessel, as a fluid or semi-fluid mass will naturally run down by itself without any assistance, while if that arrangement is not observed, we are obliged to pump the fluid up, which is an additional labor and expense. On this principle, in working silver ores, the stamps for crushing stand generally on an elevated place, so that the ground ore will run by itself into the pans, and from thence, after being amalgamated and diluted with water, will run into boxes or vats, which occupy a still lower place, etc. Or, if the ore is ground dry, it will be conveyed to the tops of the roasting furnaces, will discharge itself, and after being roasted, fall to a still lower place for being sifted, etc. All these things appear trifling and childish, but still without them we cannot succeed.

In concluding my remarks, I will only say, that not only large operations require practical experience, but everything, even the smallest operation, requires practice, which we cannot learn from books, but only by actual working, since a good many things appear too insignificant to be found in any theoretical work. I think no one will dispute that the many small operations of analytical, or even synthetical chemistry, require not only a thorough knowledge of the laws of nature, but a proper management of the tools and vessels, and a practical manipulation of the substances. How many times have I destroyed my vessels, and lost the result of my labor by want of experience! Of the many things that annoyed me, I will mention only a few.

Once, I intended to make persulphuret of soda; I took a heater glass, put pulverized sulphur in it, then poured in a solution of caustic soda, and applied the heat of a spirit lamp. The result was that the glass cracked, and the contents ran out upon the table. I tried another glass with no better result, until it occurred to me to put the solution of caustic soda in first, and the pulverized hrimstone on the top of that. After that I never broke any more glasses, and I could boil it as long as I chose.

Another time I wished to produce carbonic acid gas by fermentation, and to saturate an alkaline solution with the same. I put sugar, water and yeast into a bottle with a perforated cork, and conducted the gas through a bent glass pipe into another glass, containing the alkaline solution. I placed the apparatus on the window-sill, and left it there. When I returned, after some time, I found my whole apparatus smashed to pieces, as also were all the panes in my window glass. The glass had an outlet, but not sufficient. I repeated the experiment with a wider glass pipe, and succeeded.

Once I attempted to make chloride of calcium. I put hurned lime into concentrated muriatic acid; but I was very much astonished when I found that the lime would by no means dissolve in the muriatic acid. I slacked the lime first with water, and then it readily dissolved in the acid. It seems that hurned lime has no more inclination to combine with an acid than the anhydrous sulphuric acid has to combine with a base.

In a great many cases we have to combine two substances, both of them soluble in water, whose solutions, when mixed, form an insoluble precipitate. Now, in working small or large quantities, we ought invariably to dissolve each substance separately, and then mix the solutions. Sometimes, to save time, I put both solid bodies together, and poured water over them. But I did not save time by that, as one substance impeded the dissolving of the other, it took much longer time, the operation was generally imperfect, and the precipitate ugly. In many cases it makes a great difference which of the two solutions we pour in first—whether we pour A into B, or B into A. A most important point, no matter whether we work by the ounce or by the ton, is to know whether it is necessary to use the precise equivalent of either solution, or whether it is better to take a surplus of one or the other. Now, if we deal with precious substances, we have to be very careful in most cases not to take the least excess either of one or the other solution, which we can only accomplish by repeated testing; as, for instance, in precipitating a solution of nitrate of silver with common salt, we must take

just enough of the latter to precipitate all the silver, but not the least excess, as a part of the already formed precipitate would be dissolved again. The same will be the case if we precipitate chloride of gold with cyanide of potash, etc. In other cases, particularly if we work with cheap material, it is very desirable to take a small excess of one of the two substances, since it is tedious to ascertain the precise equivalent, and as it is very often the case that a surplus of one solution would injure the precipitate in some way, we consequently are quite safe in taking an excess of the other.

I once had a very narrow escape from serious personal injury, when I tried to light hydrogen gas, which I produced by treating zinc with diluted sulphuric acid in a bottle; and although I allowed the gas only to escape through a very fine orifice, still it resulted in a tremendous explosion, breaking everything to atoms, most likely because I did not wait long enough to give the enclosed atmospheric air time to escape. Repeatedly I destroyed my crucibles, until I found out some of the different causes of it. Sometimes the contents were of such a kind as to liberate a large quantity of gases when exposed to red heat, and as I stamped the contents very firmly into the crucible, the gases not finding an outlet, the crucible was broken in a good many places. The very same operation would succeed very well by putting the mixture loosely into the crucible, without forcing it in. Almost every one knows that it is well to heat the crucible gradually. I found, also, that if I used wood for kindling the charcoal, and put the crucible in the fire before the blazing flame of the wood had subsided, it would very often crack the crucible, as many crucibles will endure the greatest heat that charcoal can produce, but cannot stand the blaze of the kindling wood, because this produces an uneven heat in the different parts.

I could thus keep on writing hundreds of pages about trifling things. It is the knowledge of these trifles which distinguishes the practical man from the mere book-man; they are all founded on some reason or other, and without observing them we destroy our tools, waste our material, and consequently do not get the desired result; even sometimes endanger our lives.

But to return to my first statement, I will only ask whether there is any sense in calling a man a practical chemist merely because he has worked with large quantities? In the mines we find a class of men calling themselves chemists that know just enough to put ground silver ore in iron pans, mix it with salt, and a little blue, green or white vitriol, quicksilver and hot water, afterwards time to discharge it, and to get their amalgam. But I should imagine that to deserve the name of a *practical chemist*, a man ought to be a thorough chemist. Any man might learn to perform one operation of some kind, and even might perform the same tolerably well; but unless he has studied chemistry from the foundation, he cannot remedy any defects in the operation, because he does not know where the fault lies, neither does he know the remedy. For instance, if an ignorant man, in extracting gold or silver, loses one-half of the precious metals, he must be satisfied, since he does not know how to change the operation so as to get the other half. If any change in the ore occurs, he is lost forever, because he has only learned how to do one thing, and this one thing he expects to answer for everything, just like a patent medicine that will cure any kind of disease, no matter what it is.

**WESTERN UNION TELEGRAPH.**—A New York telegram, dated February 28th says: "A letter from the directors of the Western Union Telegraph Company says they resolved at a recent meeting to send a Commissioner to Russia to urge that Government to assume the construction of the Russo-American telegraph from the Amoor to the Russian possessions. If Russia refuses, it is probable that the line will be abandoned. The Atlantic Cable proving a success beyond the expectations of those who constructed it, but not being fully employed, which causes a reduction of its rates—is assigned as the reason for the abandonment of the enterprise. It is stated that the company have expended two and a half millions of dollars, and has property and funds worth one million and a half."

**SMALL DEFECTS IN IRON CASTINGS** may be filled with a composition made by fusing together nine parts of lead with two of antimony and one of hismuth. This metal expands in cooling, and will keep its place.

**QUARTZ MILLS** in Vermont, to the number of from four to six, will be put up during the coming season.

## How Long will a Snail Live Without Food.

[Read before the California Academy of Natural Sciences, March 4, 1886, by R. E. C. STEARNS.]

In my remarks upon the *genus Helix*, made before the Academy last August, I made no reference to the annual period of inactivity, torpor or sleep, peculiar to the snails and other tribes of the *Gophila*, and which is called hibernation or estivation, according to its occurrence either in winter or summer. Some conchologists use these words synonymously, as will be seen erroneously, at least in some cases, from the fact that in countries where the winters are cold, and accompanied with snow and ice, the sleep of the snail is properly hibernation. Where the summers are hot, dry or rainless, as in the greater portion of the Pacific States and in South America—for instance in the Atacama desert—the period of sleep is in the season of summer. In the Philippine Islands, where the climate is perhaps the most favorable for the snail, this period of hibernation or estivation is very short, even if it exists at all. Hardly a day passes without a shower or showers; the snails are numerous, both in species and individual, and attain a large size. The shells of many of the species are high-colored, and of the texture of French porcelain. In these islands, at all seasons of the year, they may be seen crawling up the trunks of the palms and other trees, or feeding upon the luxuriant vegetation of this tropical climate.

It is true, that in isolated instances, this period of torpor extends to an abnormal length, embracing both winter and summer; continuing for years, with, perhaps, limited intervals of inactivity, proving the remarkable vitality of these comparatively insignificant animals, and their ability to exist for great lengths of time without food.

In that invaluable work to the conchological student, entitled "Recent and Fossil Shells, by S. P. Woodward, pages eighteen and nineteen," several instances are cited of the duration of this sleep, and of resuscitation after long fasting and imprisonment—in some cases continuing from one and one-half to two and one-half years.

Particular mention is made of a specimen of the snail *Helix desertorum*, which was affixed to a tablet in the British Museum, March 25th, 1864, and upon the 7th of March, 1850, it was observed that the animal must have come out of the shell, as the paper was discolored in the attempt to get away, but finding escape impossible, it had withdrawn inside of the shell and closed the aperture with the usual glistening film, which led to its immersion in tepid water and marvellous recovery. It will be noticed that this period embraced nearly four years.

A more remarkable case has come under my observation, which is worthy of mention.

Dr. Veatch, a member of this Academy, visited Cerros or Cedros Island, opposite the coast of Lower California, and upon his return, in the year 1859, brought home, among other shells, a species of *Helix*, supposed to be new, described by Dr. Newcomb, of Oakland, and to which the latter gave the name of *Helix Veatchii*; many specimens of this species were obtained, and some of them were given by Dr. Veatch to the late Thomas Bridges. Mr. Bridges died in September, 1865, and in December of the same year a portion of his collection passed into my hands, including the same species of *Helix Veatchii* to which I have before alluded. Judge of my surprise, when one day, upon a careful examination, I detected a living specimen, which after being placed in a box of moist earth, in a short time commenced crawling about apparently as well as ever; and fearing from its activity that by some accident it might crawl away, and I might thus lose it, after a fortnight's furlough from its long imprisonment, I placed it in a pill-box, marking the date of its imprisonment upon the cover, in order that at some future time I may examine it, and ascertain possibly, if it does not outlive me, how long a snail can live without rations.

Here is an instance of a snail living at least six years—in California parlance, without a single square meal; and it is probably still alive, though sleeping, and perhaps dreaming of Cerros Island and the snails it left behind.

The river St. Lawrence is to be dammed at Lachine Rapids, in order to obtain hydraulic power. The capital of the company, which proposes doing it, is \$2,000,000.



## Mechanical.

## Cheapening the Product of Iron.

The enormous and steady increase in the demand for iron, renders every improvement in its manufacture of immense value. Not the least important item in cheapening the production of iron in England, within the past few years, has been the improvements in the construction of blast furnaces. Twelve years ago it was thought impossible to work a furnace over fifty or fifty-five feet high; while the utmost limit allowed the "boshes" (the place of greatest diameter in the furnace) was not over fourteen or eighteen feet in diameter. With furnaces of such a description nearly all the gas generated in the combustion of the fuel either passed off as smoke, or was burned at the top of the chimney, throwing up huge volumes of flame, which lighted up the country for miles around.

Furnaces are now constructed from 85 to 102 feet high, and with boshes from 22 to 27 feet in diameter. The great advantage of this increase in height and diameter, is found in the more perfect economizing of heat. With a furnace only 45 or 50 feet in height, a large portion of the heat passed out in a continuous stream of hot air and gas; while this air is now carried up to double that height, passing all the way through the mass of "material"—the technical term for the coke, lime and ore employed in producing the iron. During this passage the air and gas imparts nearly all its heat to the mass, and leaves the furnace at a temperature but little in excess of summer heat.

The fear heretofore has been that the superincumbent mass of material would so crush the coke at the bottom of the furnace as to render it unfit for fuel. The result is, what in fact might reasonably have been expected, that there is no more pressure upon the hearth of a furnace 100 feet high, than there is upon one only 50 feet in height. The philosophy of this may be readily explained by gradually filling a small glass tube with sand, and watching the process. The particles of sand will be seen to arrange themselves in the form of a series of cones, one over the other, sloping from the central apex in every direction to the sides, at an angle of about 45 degrees. If a tube three-quarters of an inch in diameter, be thus filled to the depth of five or six inches, and then laid down upon its side, and a stick thrust in to push the sand through, the effort will be unavailing. The peculiar arrangement of the sand, as above described, causes a lateral pressure, so that the walls of the tube hold the weight of the sand, or resist the pressure applied by the stick.

So it is in the cupola furnace, when the filling in of the material is carried to any considerable height above the point where the mass becomes plastic, the entire weight of the hard mass in the upper portion rests upon the walls of the furnace, and not upon the hearth. If the full weight came upon the molten mass, the incandescent coke would be crushed and the furnace become choked, or, as the furnace-men call it, "gobbed." We presume that in constructing these extra high furnaces, the upper portion is built with nearly perpendicular walls; or at least with less inclination than is usually given to the walls above the boshes, in the low furnaces. It would be necessary to give them some outward inclination, in order for the mass to settle at all.

**ENGRAVING BY MACHINERY.**—The American *Artisan* acknowledges the receipt of a specimen of machine engraving done by J. C. Guevant and R. J. Field, of Lakesville, N. C. They claim that their machine will do all kinds of engraving; that it can engrave the "Declaration of Independence" in a circle of one quarter of an inch diameter, so that it can be read distinctly with a magnifying glass. The machine is adapted to engraving the inside of finger rings and all other surfaces. An illustrated description of this ingenious machine will shortly be published.

**SHAVINGS IN METAL TURNING.**—The shape and length of the shavings made in turning metals are determined partly by the skill of the workman, partly by the quality of the cutting tool, and partly by the nature of the material operated upon. Continuous shavings of great length in steel and iron turnings are proofs of the malleability and uniformity of the metal. In gun factories the continuity of the shaving in turning the barrels is considered a proof of the solidity of the welds. In testing the soundness of railway axles, after they have been in use for a certain length of time, a thin shaving is removed. The smallest crack in the axle, even if not perceptible under the microscope, will cause the shaving to split up longitudinally. A practiced eye will determine the state of the cutting tool from the cuttings taken off by it. If this tool is blunt, the crushing action upon the shaving will be increased, and it will be very short in proportion to the surface from which it was removed. In planing armor plates, the shavings are the best proofs of the malleability of the iron. The London *Engineering* says that at the Atlas Works, in Sheffield, shavings six inches in width are taken off the whole length of a plate in one continuous piece.

**MR. NASMYTH ON "SMALL INVENTIONS."** In the course of his examination for the plaintiff in the recent case of *Bovill vs. Goodier*, Mr. J. Nasmyth made the following observation, on the influence of a small modification on the success of greater inventions. He remarked: "One of the most successful inventions of the day is that in sugar-refining, of the application of the apparatus which used to be applied for drying cloth and getting rid of water from textile fabrics. It was a patent of Mr. Bessemer's for getting rid of the molasses from sugar, by the rapid whirling of this vessel. It was found that the outside of the vessel being covered with wire cloth so as to allow the molasses to escape and yet retain the sugar, the molasses gathered on the outside of the wire-cloth and collected there in a coating. After some of the most ingenious minds had been applied to it, one of the most ingenious men of the day, Mr. Bessemer, saw the whole thing fail on account of the simple difficulty that remained—a difficulty which stood for some years. But another inventive man suggested that by blowing a small stream of steam on the outside of the wire-cloth, it would just so much dilute the treacle as to allow the same to be operated upon by the centrifugal action. That small jet of steam made the invention entirely successful. It was one of those trifling little things that it surprises one it should not have been thought of; but it sometimes requires the study of the most profound philosophers to accomplish these things. It was thus with James Watt's separate condenser."—*American Artisan*.

**ANTI-ATTRITION POWER.**—Under this heading the Patent Plumbago Crucible Company, of Battersea, have recently introduced an impalpable powder, perfectly free from grit, which has the property of cleansing and polishing the machinery to which it is applied. It is found to answer admirably the purpose for which it is intended, and is coming largely into use, we understand, for lubricating the cylinders of blowing engines, and for dusting molds for iron and brass castings, as well as the ingot molds for Bessemer steel. This anti-attrition powder does not heat, and possesses the great advantage of not catching dust, etc., as oil and grease do. It is found that it adheres well to metals, and it is thus particularly applicable to quick-running shafts, as it does not fly off.

**TEMPERING SPRINGS.**—Heat the spring evenly throughout its entire length, in a charcoal or coke fire, to a light-red heat; then plunge it into warm whale or lard oil, and let it remain until cool. Now smear the spring with tallow, and heat it slowly over a brisk coal fire. The tallow melts, then takes fire. While it is burning, move the spring about, so that the blaze will completely envelope it. Repeat this operation, and even a third time if the spring is to be subjected to great strain.

**DIFFERENCE IN METALS.**—An alloy of copper, hard enough for an edged tool, is softened by being heated and plunged into cold water; while iron and steel are hardened by the same treatment.

## Scientific Miscellany.

## Origin of Anthracite—Effect of Thermal Action.

Mr. Daubree was the first experimenter who distinctly pointed out the true origin of anthracite, and proved his theory by actual demonstration. Pressure and heat had previously been considered the chief, if not the only agents in the production of bituminous coal from wood fiber, and anthracite from bituminous coal; but the agency of hot water seems to have been entirely overlooked. In order to show the agency of water in metamorphic action, M. Daubree enclosed various substances in strong iron tubes, filled with water and closed tightly with screw plugs. These tubes were built into the brick work of a gas furnace, where they were constantly exposed for a period of several months.

Subsequent examinations showed that wood, thus exposed, was first reduced to a gelatinous state, in which it lost its longitudinal form, and was compressed into a globular shape. After remaining a while longer, this ball was converted into anthracite coal.

Glass on being subjected to a similar treatment was decomposed, and its silic converted into beautiful crystals of quartz.

Continued observations showed that it was not necessary that the water in these experiments should be superheated; but that the same result would take place in water kept at, or even just below the boiling point; provided sufficient time was allowed for the slower action.

It is well known that the warm springs of Plombiers, in Italy, were used by the ancient Romans for bathing purposes—the waters being conducted into the city through aqueducts built of brick and cement. These thermal waters ran through this aqueduct for a period of about 2,000 years. On its being broken down and examined, the interior surface was found to be transformed into crystalline minerals, similar to those which occur in metamorphic rocks; thus affording a most remarkable demonstration of the action of thermal waters in the metamorphism of mineral matter.

De Lenarmont, by a similar set of experiments subsequent to those of M. Daubree, has produced artificially most of the minerals found in metallic veins, such as quartz, (also produced by Daubree) carbonate of magnesia, zinc, spathic iron, sulphate of baryta, sulphide of antimony, mispickel (arsenical iron pyrites), ruby silver, etc. These illustrations of the metamorphic action of hot water are most interesting and important, especially when taken in connection with the well established fact that nearly or quite the whole surface of the earth has been for ages covered with seething oceans of hot water.

Mr. W. R. Frink, of this city, has recently communicated to the writer, the following interesting fact, obtained by him personally, some ten or twelve years ago, from Dr. Crookshank, of Harrison, Ohio. The Doctor had been in the habit of keeping in his office small quantities of Seneca oil (crude petroleum), which he used as a medicine. One day, about the time of the interview with Mr. Frink, the Doctor, on looking over some old rubbish in his office, found a small vial marked "Seneca oil," which had probably remained in its hiding place, undisturbed for twenty or thirty years. On drawing the cork he found that the substance had become solidified. He then broke the vial, and to his great surprise, held in his hands a cylinder of *anthracite coal*, which answered all the tests of that mineral. The petroleum had been actually converted into anthracite, probably losing its more volatile products, by evaporation through the cork. The position in which it had lain was such as must have enveloped it in a very warm atmosphere the most of the time, during which it had remained in the office.

Mr. J. H. White, of 109 Commercial street, in this city, informs us that Indian arrows are often found sticking up in the asphaltum beds in Tulare Valley, the wood shanks of which have been completely carbonized, so as to break as brittle as a pipe stem, showing all the characteristics of highly carbon-

ized wood. It is very evident that these arrows must have been exposed to the action of the atmosphere for a great length of time. How the metamorphism has been produced, we leave for others to judge; certainly it has not been done through the agency of heat of any greater intensity than that of the varying conditions of the atmosphere in a very uniformly warm climate.

**TO COLOR WOOD FIBER WHILE GROWING.**—It is well known that scientific experiments have lately been in progress in Europe to color the fiber of wood during the progress of its growth. Mr. Hyatt reports the results of an invention, made by himself for this purpose, and at a late meeting of the Royal Agricultural College in London, exhibited sections of wood thus stained with various hues. This is accomplished by the introduction of metallic solutions into the substance of the growing tree, which is carried up by the sap, and forced into the fibers and cells of the stem. So we can make our forests play the part of their own stainers and grainers, and cut down a pine already prepared to imitate expensive walnut or exotic mahogany. There is only one thing left to desire—that, after being thus stained, the wood could be induced to grow in the form of tables, chairs and wardrobes. That attained, we need no longer despair of realizing the much talked of machine into which you put raw cotton at one end, until by-and-by there emerges at the other a calico shirt, hemmed, starched, ironed, with the buttons all on, and neatly marked.

**PHOTOGRAPHY AND EMBALMING.**—Photography has recently been applied in Europe to a purpose of an unusual nature—obtaining the likeness of a person who had been dead for some months, and with such good results, as, with the assistance of the embalmer, they can scarcely be distinguished from a photograph from life. The art of the embalmer, however, seems to have acted the chief part in accomplishing the results. The *Scientific Review* recently called the attention of its readers to the processes by which M. Gorini preserves organic matters from putrefaction, imparting to them the consistency of stone, without altering their appearance, and retaining them in a condition from which he is able to render them flexible at pleasure. The *Review* says that Pietro Martini, the author of a history of Sardinia, who died on the 17th of February, 1866, and whose body has been preserved by M. Gorini's process, was taken out of his coffin on the 17th of June last, and after having been rendered flexible that he might be properly posed, and appropriately clothed, his likeness was taken with the most perfect success, so that it would never be imagined that it was obtained four months after his death.

**SUN SPOTS CAUSED BY PLANETARY INFLUENCE.**—Mr. Warren De La Rue, who has been for some time engaged in closely observing and studying the spots upon the sun, thinks he has discovered an intimate connection between the numbers and activity of those spots, and the positions of the planets Venus and Jupiter. The nearness of Venus and the magnitude of Jupiter, are such that the attraction of those two planets produces a perceptible effect upon the sun's atmosphere, developing the phenomena known as spots upon the sun; the effect being similar to that of the moon upon the earth, as developed in the tides. This observer has noticed that whenever the planets cross the solar equator, the region of the sun, then more directly acted upon by those planets, becomes more active, and the spots increase in number; and, on the contrary, when the planets are farthest away from the equatorial region, then the spots multiply towards the solar poles. In this we have clearly a case of action and reaction, or, as stated by Mr. De La Rue, "solar activity, as shown in the phenomena of sun spots, would not exist but for planetary influence, any more than certain physical phenomena of the planets would be produced without solar influence." A paper is shortly to be published, with particulars of the observations from which these conclusions have been derived.

**THE SPEED OF ELECTRICITY.**—During the operations involved in determining the difference of longitude between the Astronomical Observatory at London and that at Washington, it was ascertained that the time occupied by a single flash of electricity through the Atlantic Cable was only thirty-five one-hundredths of a second.



## Blank Forms.

Persons who wish to avail themselves of the recent Act, will first file, by mail or otherwise, with the Register at the U. S. Land District in which their claims are located, a "Declaratory Statement," in the following form:

## I.—APPLICANT'S DECLARATORY STATEMENT.

WHEREAS, the undersigned, present owners of the mining claim known as....., situated in the.....District, County of....., State of California, petition for a patent for said claim, under the Act of Congress entitled "An Act granting right of way to ditch and canal owners over the public lands, and for other purposes," approved July 26th, 1866; and respectfully represent that they are an association of persons claiming.....feet of said vein or lode of.....[a further description of said claim being set forth in a diagram accompanying this declaration], and have heretofore occupied and improved the same, in accordance with the local custom and rules of the miners in said District, a copy of which rules are heretofore annexed, marked "A," and have expended in actual labor and improvements thereon an amount not less than one thousand dollars, according to Exhibit "B," hereto annexed; that there is no controversy, within the petitioners' knowledge, as to said claim; that they herewith present a diagram of said mining claim, so extended as to conform to the rules of said mining district, and they claim to enter said vein or lode, together with its dips, angles and variations, to any depth, although it may enter the land adjoining.

That upon filing hereof, they intend posting upon the said lode, in a conspicuous place, a notice of the intention to apply for a patent for the same, together with a copy of the diagram herewith presented, and request that the Register of the U. S. Land Office for the.....District do publish the same, according to said Act, in the.....a paper published at.....in the county of.....California, being the paper published nearest the location of said claim.

That the said parties are, by priority of possession, entitled to the use of water, for.....purposes, of.....Creek, in said District, according to the customs or laws of said District and the right of way for the construction of ditches and canals for the purposes aforesaid; and that the same does not injure or damage any settler on the public domain. [This paragraph to be omitted when no special water privileges are claimed.]

The parties hereto, therefore, propose, at the expiration of the ninety days after this publication aforesaid, should there be no adverse claim, to file in this office a plat of survey of said vein or lode, made under the instructions of the Surveyor-General of the United States, for the.....indorsed with his approval, designating the number and description of the location, the value of the labor and improvements, and the character of the vein exposed, together with satisfactory evidence that said diagram and notice have been posted on the claim during said period of ninety days.

And the said parties hereby request, that after furnishing said proof, you will thereafter transmit to the General Land Office said plat, survey and description, that a patent may issue therefor.

The above must also be accompanied by a diagram drawn in accordance with the directions stated in the paragraphs of the foregoing "Instructions from the General Land Office," commencing with "First," "Second," "Third," "Fourth" and "Fifth," and the succeeding paragraph thereto. Beneath, or annexed to the diagram, should be a description and explanation of the same. Also, another copy of the diagram and notice is required to be posted on the claim for ninety days after the order of publication is given by the Register.

## II.—DIAGRAM, DESCRIPTION OF DIAGRAM AND BOUNDARIES, AND NOTICE.

NOTICE.—The undersigned give notice that they intend to apply for a Patent for that portion of the vein or lode set forth in the above diagram, called the.....which belongs to the.....Company, comprising.....feet, adjoining on the.....end the claims of.....and on the.....end the claims of.....situated in the.....District, County of.....California, and now post this notice on a conspicuous part thereof. Dated, on the ground, this.....day of....., 186.....

Witnesses.....

Next comes the Register's order for publication of copy of the notice required to be posted on the claim. (This order the applicants publish at their own expense.)

## III.—REGISTER'S ORDER FOR PUBLICATION—WITH NOTICE.

U. S. LAND OFFICE, }  
.....186.....

WHEREAS, the company known as.....claiming certain mineral veins or lodes, lands,

and.....in Township No.....and Range No.....Meridian, included in the.....District (the bounds and extent of said claims being fully set forth in the notices posted in this office and on the claim itself), has this day filed in the U. S. Land Office for this District, a declaratory statement, with accompanying diagram of the claim, declaring therein the intention of said company to mine for.....and apply for a U. S. Patent for the lode and land claimed;

It is hereby ordered, that the annexed notice be published for ninety days in the.....a newspaper published at.....in the State of California.

Given under my hand, this.....day of.....186.....Register.

After ninety days' posting and publication of the above, the following blank must be signed by at least two credible witnesses, and filed with the Register:

IV.—DEPOSITION THAT NOTICE HAS BEEN POSTED. County of.....ss.

State of....., of said county, being duly sworn, depose and say, that they were present when the foregoing notice and diagram were posted on the.....vein or lode in the.....District, county of.....California; that the same were posted in a conspicuous place on said vein or lode, and remained in said place for the term of ninety days after the date thereof.

Sworn to and subscribed }  
before me,.....

Whereupon the following application may be issued by the party in interest, direct, or through the Land Office:

## V.—APPLICATION FOR SURVEY AND TENDER OF EXPENSES.

U. S. Surveyor General, San Francisco, California—Sir: Having complied with that portion of sections 2 and 3 of the act of Congress entitled "An Act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July 26th, 1866, which requires the filing of a diagram and notice with the U. S. Register, and posting the same upon the mining claim known as.....in the.....District, County of.....California, we now apply to you to survey the premises and make a plat thereof, indorsed with your approval, designating this number and description of the location, the value of the labor and improvements, and the character of the vein exposed; and return a copy thereof to the Land Register of the United States for.....Land District. The expenses of which survey, etc., we herewith tender, and request that prompt action be taken herein.

Very respectfully, .....

When the survey has been executed and satisfactory evidence rendered, the Surveyor-General will furnish his official certificate of the same, which the applicants shall file with the Register and Receiver, and pay five dollars per acre for the ground contained in the plat. The Register will then transmit the proper documents to the General Land Office, when a patent may issue.

## United States Land Districts.

## CALIFORNIA.

No. I. Office at Eureka—Embraces the counties of Del Norte, Klamath and Trinity, the northern portion of Mendocino, and the western portions of Colusa, Tehama, Shasta and Siskiyou.

No. II. Office at Marysville—Embraces the counties of Plumas, Butte, Sierra, Yuba, Nevada, Sutter, Placer and El Dorado, the larger portion of Siskiyou, Shasta, Tehama, Colusa and Yolo, and the northern portions of Solano, Sacramento, Amador, Calaveras and Mono.

No. III. Office at San Francisco—Embraces San Diego, Santa Barbara, San Luis Obispo, Monterey, Santa Cruz, Santa Clara, San Mateo, San Francisco, Marin, Napa, Sonoma and Lake, and a portion of Mendocino, Colusa, Yolo, Contra Costa, Alameda, Stanislaus, Merced, Los Angeles, San Bernardino; also Arizona Territory.

No. IV. Office at Stockton—Embraces San Joaquin, Tuolumne, Mariposa, Fresno, Inyo, Kern, Tulare; principal portion of Mono, Calaveras, Amador, Sacramento, Solano, Stanislaus, Merced, and a part of Contra Costa, Alameda, Los Angeles and San Bernardino.

LYON MILL AND MINING COMPANY.—This company has been organized for the purpose of mining in the Kelsey Mining District, El Dorado county. The amount of their capital stock is \$120,000, and the time of their corporate existence to be fifty years. The number of shares is 1,200, of \$100 each. The trustees are A. C. Teitman, A. Walrath, W. H. Lyon, S. Kennedy, and James M. Classen.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
March 9, 1867.

## MONEY MARKET.

We observe no material change in the condition of the money market since our last reference. The demand in commercial circles is light, trade being dull and merchants generally indisposed to operate in advance of wants. Notwithstanding the unpropitious character of the season thus far to many interests, the present condition of the mercantile classes and the prosperity attending business matters generally are favorable omens for the future.

## CITY STOCKS.

Transactions in city shares have been very limited during the past week, and no special inquiry manifested itself for any particular kind, with the exception of Spring Valley Water Company, over 200 shares selling within a range of \$68@66.50 per share; at the close \$66 is bid. California Steam Navigation Company sold at 65 per cent. For 50 shares of Bank of California stock \$134 per share was obtained.

## MINING SHARE MARKET.

The share market exhibited considerable tone at the close, and most leading stocks sold at an advance. Mail advices are still retarded by the almost impassable condition of the roads, and all mining operations are necessarily much impeded. The season has been one of extraordinary severity. Ore has been hauled with the utmost difficulty, and wood is said to be very scarce and in great demand by the millmen.

The trustees of the Savage Company, at a meeting held on Thursday last, resolved to subscribe \$150,000 to the stock of the Sutro Tunnel Company, subject to the approval of the stockholders at their next meeting. The subscriptions to this important enterprise are gradually assuming larger proportions, and now amount to \$365,000, as follows: Hale & Norcross, \$100,000; Gould & Curry, \$100,000; Savage, \$150,000; and Empire, \$15,000. It is said that if other leading companies would now come forward and subscribe liberally, this great work could soon be commenced.

The Eureka Mine of Grass Valley continues to maintain its former prestige. The regular dividend of \$30,000 for the month of February was declared last week, and since then an extra dividend has been disbursed to the owners of \$20,000, making in all \$2,500 per interest or share earned since February last.

SAVAGE—was dealt in to a considerable extent at enhanced rates, opening at \$1,930, gradually advancing to \$2,000, and closing yesterday at \$1,915. This company disbursed a dividend of \$100 per share to its stockholders yesterday, carrying over a cash surplus of about \$60,000. The supply of ore on hand on the first instant amounted to about 4,000 tons, of which 2,000 tons were at the mills. Mail advices from the mine to the 23d ult. say that the seventh station is yielding largely, and that the ore is of a better quality. The upper floors, on the sixth station, have also improved, and an increased yield is expected from the southeast face. The south winze, near the Hale & Norcross line, has been sunk to the depth of 95 feet and is in good ore. The required 130 feet, from the seventh to the eighth station, have been sunk, and the new station will soon be opened. During the week ending February 23d, 1,687 tons of ore were extracted from the mine, showing an assay value of \$62,634—equal to \$37.12 per ton.

CROWN POINT—is also in better favor, selling at \$850@855, then at \$390@900, and closing at \$900, b 30. The bullion returns for the month of February amounted to about \$115,000. On the 4th instant this company commenced drifting from the 500-foot station, and the prospects of finding a good body of ore on the east vein from this point are very encouraging. The average

yield of ore has been about 100 tons per day. The recently very heavy snow-fall has greatly impeded all mining operations on the Comstock.

YELLOW JACKET—has been quite active at an advance, realizing early in the week \$705@720, rising to \$750@770, then selling at a further advance, and closing yesterday at \$750. A statement forwarded to the office in this city, for the week ending February 18th, shows the production of this company's mine to have been 1,347 tons during that period, and the yield of bullion is reported to be over \$38,000.

CHOLLAR-POTOSI—has been largely dealt in at improved prices, over 600 shares changing hands, obtaining \$240@256, advancing to \$253 under a large sale, and closing at \$250. We learn that the receipts of bullion during the month of February exceeded \$100,000. The shipment of ore to mills for the week ending February 23d amounted to 956 tons. It is said that the ore taken from this mine within a month past has been of a better quality than for a considerable time prior.

IMPERIAL—is in marked request at advanced figures from our last quotations, with considerable sales during the week, steadily advancing from \$175 to \$195, seller 30, and selling yesterday at \$202. The bullion product for the month of February aggregated \$116,200, a gain over the January yield, notwithstanding it was a short month. It is said that the mines of this company never looked better. The mills are running full, and it is thought they will not be obliged to stop for want of ore in consequence of the bad condition of the roads.

GOULD & CURRY—is quite inactive—very few sales taking place; opening at \$475, improving to \$490, and at the close selling at \$475. The yield of bullion in February amounted to about \$55,000, being the product of ore taken from points above the fourth station. Prospecting on an extensive scale continues to be done without very satisfactory results at this date.

OPHIR—has been in more request this week than last, opening at \$215, advancing to \$242.50, receding to \$222, and at the close selling for \$223. Some predicate the activity in this stock within the past few days upon a streak of quartz encountered in the east drift from the tenth level, which is now in about 66 feet.

EMPIRE—exhibited considerable animation during the week, advancing from \$172.50 to \$182.50, and at the close \$181 is asked. Owing to the non-receipt of bullion detained in Virginia City this company have not declared their usual dividend. It is said that as soon as the roads are in a condition to transport this bullion a dividend will be made.

BELCHER—sold to a small extent within a range of \$107@120 per share. CONFEDERATE manifested some inquiry at declining rates, with large sales at the close, falling from \$15 to \$12, and selling yesterday at \$10. Assessment of \$25 per share delinquent on the 14th instant. BULLION has been purchased at declining rates—\$13@12.50, and rallying at the close to \$14, seller 10. The assessment of \$10 per share levied on the 9th of February will be delinquent on the 11th instant. EXCHEQUER sold at \$1 per share.

The aggregate sales of Stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$873,863.

## City Amusements.

METROPOLITAN.—On Monday night, the prince of conjurers, Robert Heller, made his first appearance at this house, and the rush to obtain seats during the week has been unabated. His performances are very different from those of any other magician who has been here, and are wonderful. Added to this is his marvelous execution upon the piano, which is certainly not his least talent, while his small talk and puns, good and bad, keep the audience in a roar. The mystery of "second sight" should be seen to be appreciated.

OPERA HOUSE.—Miss Kingsbury's second piece, "The Mariner's Compass," was hardly more successful than "The Orange Girl," and was withdrawn on Monday night. On Tuesday night, "Arrah-na-Pogue," with Miss Kingsbury as Arrah, drew a very good house. Wednesday night, "Hamlet," John McCullough as Hamlet, and Miss Kingsbury as Ophelia. Thursday night, the favorite "Fanchon" was greeted by a crowded house. Friday night, "The Sea and Land."

WOODWARD'S GARDENS.—This pleasant resort has constant additions made to its already fine collection, and is well worth a visit.



## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

Monday, March 4.

AFTERNOON SESSION.

10 shs Imperial at 125 per share, b 30.
10 shs Imperial at 145 per share, b 30.
5 shs Imperial at 187½ per share.
25 shs Chollar-Potosi at 250 per foot.
5 shs Chollar-Potosi at 240 per foot.
5 shs Chollar-Potosi at 235 per foot b 30.
5 shs Chollar-Potosi at 232½ per foot b 30.
5 shs Chollar-Potosi at 232 per foot b 30.
1 sh Savage at 1900 per foot, a 60.
2 shs Savage at 1920 per foot a 60.
1 sh Savage at 1900 per foot.
2 shs Savage at 1980 per foot.
4 shs Crown Point at 850 per foot.
16 shs Crown Point at 850 per foot.
1 sh Yellow Jacket at 740 per foot a 30.
3 shs Yellow Jacket at 745 per foot a 10.
3 shs Yellow Jacket at 747½ per foot a 10.
10 shs Yellow Jacket at 740 per foot.
15 shs Yellow Jacket at 750 per foot.
Amount of sales.....\$137,190 00

Tuesday, March 5.

1 sh Yellow Jacket at 740 per foot a 30.
1 sh Yellow Jacket at 750 per foot b 30.
1 sh Yellow Jacket at 740 per foot c.
1 sh Yellow Jacket at 740 per foot.
1 sh Yellow Jacket at 732.50 per foot a 3.
1 sh Yellow Jacket at 730 per foot a 3.
1 sh Yellow Jacket at 735 per foot b 3.
2 shs Yellow Jacket at 735 per ft a 3.
1 sh Yellow Jacket at 710 per foot b 50.
1 sh Yellow Jacket at 737½ per foot b 10.
1 sh Savage at 2000 per foot.
1 sh Savage at 1975 per foot b 30.
1 sh Savage at 1975 per foot a 60.
1 sh Savage at 1975 per foot.
6 shs Savage at 1950 per foot.
1 sh Savage at 1971 per foot, a 3.
1 sh Savage at 1980 per foot b 30.
2 shs Savage at 1950 per foot, a 15.
6 shs Savage at 1925 per foot, a 63.
1 sh Savage at 1975 per foot, b 30.
16 shs Gould & Curry at 475 per foot.
4 shs Gould & Curry at 470 per foot a 30.
60 shs Ophir at 215 per foot, a 3.
12 shs Ophir at 215 per foot, a 10.
72 shs Ophir at 217½ per foot.
61 shs Ophir at 220 per foot, b 30.
1 sh Chollar-Potosi at 240 per foot.
3 shs Chollar-Potosi at 248 pr foot.
2 shs Chollar-Potosi at 247½ pr foot.
1 sh Chollar-Potosi at 246 per foot.
1 sh Chollar-Potosi at 245 per foot.
20 shs Chollar-Potosi at 246½ pr ft a 10.
4 shs Chollar-Potosi at 246 per foot a 3.
4 shs Crown Point at 850 per foot.
7 shs Empire M & M Co. at 180 pr sh a 5.
3 shs Empire M & M Co. at 183 pr sh, b 30.
7 shs Empire M & M Co. at 180 pr share.
1 sh Empire M & M Co. at 182½ per share.
10 shs Bullion at 13 per share.
12 shs Bullion at 12 per share.
20 shs Bullion at 11 per share, a 30.
10 shs Bullion at 13 per share a 3.
15 shs Imperial at 180 per share.
6 shs Imperial at 180 per share, b 50.
5 shs Imperial at 192½ per share, b 30.
5 shs Imperial at 186 per share, a 30.
5 shs Imperial at 188 per share, a 30.
15 shs Confidence at 15½ per share.
5 shs Cal Steam Nav. Co. at 65 per cent.

AFTERNOON SESSION.

5 shs Chollar-Potosi at 248 per foot a 3.
10 shs Chollar-Potosi at 247 per foot.
5 shs Chollar-Potosi at 247 per foot a 3.
5 shs Chollar-Potosi at 248 per foot b 30.
5 shs Chollar-Potosi at 246 per ft a 10.
18 shs Chollar-Potosi at 240 per foot.
5 shs Chollar-Potosi at 250 per foot b 30.
5 shs Chollar-Potosi at 249 per ft a 3.
5 shs Chollar-Potosi at 250 per foot b 3.
24 shs Ophir at 219 per foot, b 30.
36 shs Ophir at 215 per foot.
120 shs Ophir at 217½ per foot.
21 shs Ophir at 212½ per foot a 15.
12 shs Ophir at 213 per foot.
4 shs Gould & Curry at 480 per foot.
4 shs Gould & Curry at 475 per foot.
5 shs Yellow Jacket at 720 per foot a 30.
5 shs Yellow Jacket at 735 per foot, b 50.
2 shs Yellow Jacket at 725 per foot a 3.
3 shs Yellow Jacket at 715 per foot a 10.
1 sh Yellow Jacket at 750 per foot b 30.
4 shs Yellow Jacket at 727½ per foot, b 30.
1 sh Yellow Jacket at 717½ per foot, a 10.
6 shs Yellow Jacket at 720 per foot.
3 shs Yellow Jacket at 717½ per foot.
2 shs Savage at 1925 per foot a 60.
2 shs Imperial at 187 per share, a 3.
6 shs Imperial at 185 per share, a 10.
Amount of sales.....\$142,503 50

Wednesday, March 6.

96 shs Ophir at 215 per foot a 30.
24 shs Ophir at 220 per foot, a 50.
6 shs Ophir at 220½ per foot, b 30.
610 shs Ophir at 222½ per foot, b 30.
20 shs Imperial at 190 per share.
10 shs Imperial at 187 per share, a 30.
5 shs Imperial at 190 per share, a 30.
21 shs Crown Point at 850½ per ft a 30.
8 shs Crown Point at 870 per foot.
8 shs Crown Point at 880 per foot.
4 shs Crown Point at 880 per ft a 5.
4 shs Crown Point at 825 per ft a 50.
12 shs Gould & Curry at 475 per foot.
20 shs Bullion at 12 per share.
25 shs Bullion at 12½ per foot.
20 shs Bullion at 12 per share, a 30.
13 shs Chollar-Potosi at 248 per share.
10 shs Chollar-Potosi at 250 per foot.
5 shs Empire M & M Co. at 180 pr sh, a 30.
8 shs Empire M & M Co. at 170 pr sh.
6 shs Empire M & M Co. at 170 pr sh.
2 shs Savage at 1910 per foot.
1 sh Savage at 1950 per foot.

3 shs Savage at 1900 per foot, b 10.
2 shs Savage at 1900 per foot, b 10.
5 shs Savage at 1940 per foot, a 60.
6 shs Yellow Jacket at 740 pr ft a 10.
7 shs Yellow Jacket at 780 per foot, a 10.
2 shs Yellow Jacket at 750 per foot b 10.
6 shs Yellow Jacket at 756 per foot.
\$500 Legal Tender Notes at 75½c.
\$500 Legal Tender Notes at 74c b 3.
\$500 Legal Tender Notes at 75½c b 3.
1 sh Cal Steam Nav Co at 65 per sh.
85 shs Spring Valley Water at 65 per sh.

AFTERNOON SESSION.

312 shs Ophir at 222½ per foot.
36 shs Ophir at 220 per foot, a 30.
12 shs Ophir at 219 per foot, a 13.
16 shs Ophir at 240 per foot.
3 shs Chollar-Potosi at 242½ per sh, b 30.
9 shs Chollar-Potosi at 219½ per foot.
1 shs Yellow Jacket at 732½ per foot.
1 sh Savage at 1975 per foot b 30.
25 shs Confidence at 16 per share.
30 shs Confidence at 13½ per share.
30 shs Confidence at 13 per share, a 30.
6 shs Imperial at 187½ per share.
6 shs Imperial at 187½ per share, a 30.
4 shs Crown Point at 880 per foot b 30.
12 shs Crown Point at 850 per foot b 30.
8 shs Crown Point at 860 per foot b 50.
Amount of sales.....\$176,918 00

Thursday, March 6.

120 shs Ophir at 220½ per foot a 30.
64 shs Ophir at 220, 225 per foot b 30.
640 shs Ophir at 222½ per foot.
20 shs Imperial at 190 per share.
10 shs Imperial at 187 per share, a 30.
6 shs Imperial at 190 per share, a 30.
24 shs Crown Point at 852½ per ft a 30.
4 shs Crown Point at 880 per foot a 5.
4 shs Crown Point at 825 per ft a 60.
12 shs Gould & Curry at 475 per foot.
25 shs Bullion at 12 per share.
20 shs Bullion at 12.50 per share.
20 shs Bullion at 12 per share, a 30.
6 shs Chollar-Potosi at 248 per ft a 10.
6 shs Chollar-Potosi at 247 per foot a 30.
3 shs Savage at 1940½ per foot.
3 shs Savage at 1940½ per foot b 10.
5 shs Savage at 1940 per foot b 10.
15 shs Yellow Jacket at 740 per foot a 10.
6 shs Yellow Jacket at 740 per foot b 10.
9 shs Yellow Jacket at 737½ per foot.
\$5,000 Legal Tender Notes at 73½c.
\$10,000 Legal Tender Notes at 73½c b 3.
1 sh Cal Steam Nav Co at 65 per cent.
85 shs Spring Valley W W Co at 62½ per sh.

AFTERNOON SESSION.

312 shs Ophir at 222½ per foot.
36 shs Ophir at 220 per foot a 30.
12 shs Ophir at 219 per foot, a 15.
16 shs Ophir at 240 per foot.
36 shs Chollar-Potosi at 242½ per foot b 30.
9 shs Chollar-Potosi at 240½ per foot.
6 shs Chollar-Potosi at 247 per sh a 30.
11 shs Yellow Jacket at 752½ per ft a 10.
9 shs Yellow Jacket at 760 per ft a 50.
3 shs Yellow Jacket at 765 per foot b 30.
11 shs Yellow Jacket at 760 per foot b 30.
1 sh Savage at 1975 per foot b 10.
55 shs Confidence at 16½ per share.
5 shs Confidence at 16½ per share, a 30.
6 shs Imperial at 187½ per share.
5 shs Imperial at 187½ per share, a 30.
4 shs Crown Point at 880 per share b 30.
12 shs Crown Point at 890½ per ft.
8 shs Crown Point at 890 per foot a 60.
Amount of sales.....\$189,676 00

Friday, March 9.

3 shs Savage at 1920 per foot.
30 shs Confidence at 10½ per share.
5 shs Confidence at 10 per share, b 3.
5 shs Confidence at 9.50 per share a 30.
20 shs Imperial at 197.50 per share.
16 shs Imperial at 200 per share.
10 shs Imperial at 197.50 per share, a 30.
6 shs Imperial at 200 per share a 10.
1 sh Imperial at 200 per share a 3.
14 shs Ophir at 225 per foot.
96 shs Ophir at 225 per foot, b 30.
12 shs Ophir at 224 per foot, b 30.
3 shs Ophir at 221 per foot, a 30.
24 shs Ophir at 220 per foot.
4 shs Crown Point at 890 per foot.
14 shs Chollar-Potosi at 252.50 per ft.
4 shs Chollar-Potosi at 252.00 per foot a 3.
1 sh Belcher at 120 per foot.
30 shs Bullion at 12 per share.
30 shs Bullion at 13 per share.
10 shs Bullion at 12 per share a 30.
69 shs Bullion at 14 per share.
14 shs Yellow Jacket at 756 per foot.
9 shs Yellow Jacket at 800 per ft b 50.
7 shs Yellow Jacket at 780 per ft a 30.
5 shs Yellow Jacket at 800 per ft b 10.
56 shs Yellow Jacket at 785 per ft a 10.

AFTERNOON SESSION.

20 shs Confidence at 10 per share a 50.
5 shs Confidence at 11 per share.
5 shs Confidence at 10½ per share a 30.
20 shs Confidence at 10 per share a 5.
5 shs Imperial at 202.50 per share.
10 shs Imperial at 200 per sh, a 30.
5 shs Imperial at 200 per share.
4 shs Gould & Curry at 475 per foot.
12 shs Crown Point at 890 per foot.
12 shs Crown Point at 900 per ft, b 30.
4 shs Crown Point at 880 per foot a 30.
2 shs Savage at 1900 per foot, a 30.
2 shs Savage at 1910 per foot, a 30.
10 shs Bullion at 14 per foot.
10 shs Bullion at 14 per foot, a 10.
36 shs Ophir at 222.50 per foot, a 3.
26 shs Chollar-Potosi at 250½ per foot.
23 shs Chollar-Potosi at 250½ per ft a 30.
5 shs Chollar-Potosi at 254 per foot, b 30.
25 shs Yellow Jacket at 780 per ft a 10.
10 shs Yellow Jacket at 755 per ft a 10.
10 shs Yellow Jacket at 755½ per ft a 10.
11 shs Yellow Jacket at 780 per ft b 30.
5 shs Yellow Jacket at 750 per foot b 5.
Amount of sales.....\$167,827 00

## MINING SHAREHOLDERS' DIRECTORY.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals].

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME.	LOCATION.	AMOUNT.	DAY	DAY
			DELINQUENT.	OF SALE.
Arizona Cons. Eureka Dis. Jan 14, 50c.	Feb 15-March 4			
Abernathie, Gold Hill, Jan 1st, 25c.	Feb 1-March 5			
Bullion, Gold Hill, Feb 9, 10c.	March 11-			
Big Blue Lead, Kern Co., Cal., Feb 13, 55c.	April 2-April 23			
Baldwin, Gold Hill, Jan 1st, 25c.	Feb 1-March 5			
Belcher, Gold Hill, Jan 1, 15c.	Feb 1-Mar 5			
Baltimore Amer., Gold Hill, Nev., Jan 12, 52c.	Feb 1-Mar 12			
Belcher, Gold Hill, Jan 1, 5c.	Feb 1-Mar 6			
California Bauxite Co., Nev., Feb 14, 50c.	March 11-			
Camacho, Lander Co., Nev., Feb 14, 50c.	March 11-			
Chilopina, Sonora, Mex., Jan 15, 55c.	Mar 2-Mar 25			
Cherokee Flat Butte Co., Cal., Jan 24, 55c.	Feb 23-Mar 15			
Crown Point, Nev., dividend \$100.	Payable Feb 15			
Confidence, Gold Hill, Nev., Feb 9, 25c.	Mar 6-April 4			
California Store Co., Nev., Annual Meeting March 11				
Diamond Corp., Del Norte, Cal., Feb 4, 52c.	March 23-April 15			
Duney, Lyon Co., Nev., Jan 22, 50c.	Feb 23-Mar 18			
Duney, Lyon Co., Nev., Jan 22, 50c.	Annual Meeting April 1			
Eureka Coal Mch 7, 50c.	Annual Meeting April 1			
Eureka Coal Mch 7, 50c.	Annual Meeting April 1			
Emilia, Guerrero, Mex., Feb 9, 75c.	Mar 22-April 8			
Evoca Cons. Corp., Del Norte Co., Jan 14, 25c.	Feb 23-Mar 15			
El Tesoro, Caceres, Cal., Jan 30, 51c.	Mar 1-Mar 20			
Empire M. & M., Nev., dividend \$15.	Payable Feb 9			
Great Central, Yuma Co., A. T., Mch 1, 51c.	April 8-April 31			
Geo Washington, Alpine Co., Feb 5, 53c.	Mar 16-Apr 15			
Gould & Curry, Virginia, Nev., dividend \$30.	Payable Jan 8			
Golden Rule, Cal., div.	Payable Dec 20			
Hanscom Cop. M. Del Norte Co., Mch 4, 51c.	April 1-April 22			
Hale & Norcross, Virginia, Nev., div \$125.	Payable Feb 15			
Hale & Norcross, Virginia, Nev., Annual Meeting March 13				
Imperial, Virginia, Nev., div \$12.	Payable Feb 15			
J. X. L., Alpine Co., Cal., Jan 9, 51c.	Mar 15-Mar 25			
Julia, Virginia, Nev., Jan 10, 51c.	Feb 15-March 6			
Jefferson Mtn. M. & M., Nev., Co., Jan 22, 52c.	Feb 23-Mar 20			
Keystone M., Calaveras Co., Feb 29, 51c.	April 23-May 20			
Lady Bell Cop., Del Norte Co., Jan 11, 10c.	Feb 23-Mar 18			
La Blanca, Sonora, Mex., Jan 31, 51c.	Mar 12-Apr 2			
Liberad, Ures, Mex., Annual Meeting Mar 6				
M. Tenabo, Lander Co., Nev., Feb 15, 51c.	Mar 21-Apr 11			
Nuestra Señora de Guadalupe, Mex., Annual Meeting Mar 14				
North S. P. L. & R. Assn., Feb 15, 51c.	Mar 15-Mar 25			
Ophir, Virginia, Nev., Jan 10, 55c.	Feb 14-March 15			
Orville, Butte Co., Cal., Feb 14, 53c.	Mar 21-April 2			
Patrocinio & Dolores, Mex., Feb 1, 53c.	Mar 6-Mar 22			
Rattlesnake, Yuba Co., Jan 5, 51c.	Feb 8-Feb 25			
Shoshone S. M., dividend, 52c per share.	Payable March 14			
San Marcial, Sonora, Mex., Annual Meeting March 18				
San Marcial, Sonora, Mex., Jan 13, 50c.	Mar 3-Mar 30			
Siskiyou, Siskiyou Co., Cal., Dec 10, 55c.	Jan 21-Mar 25			
Siskiyou, Siskiyou Co., Cal., Dec 10, 55c.	Annual Meeting March 11			
Savage, Kern Riv., Cal., Dec 29, 55c.	Payable March 8			
Smoky Valley, dividend.	Payable Feb 1			
Sides, Virginia, Nev., Jan 25, 51c.	Feb 22-March 25			
Santiago, Silver City, dividend.	Payable March 6			
Salvador, Calaveras Co., Feb 11, 50c.	Mar 16-April 10			
Santa Rosa, Virginia, Nev., dividend \$15.	Payable Feb 1			
Sierra Nevada, Storey Co., Nev., Feb 15, 54c.	Mar 21-April 5			
Seaton, Drytown, Cal., Jan 18, 50c.	Sale March 18			
Whitetail, Lander Co., Nev., Feb 14, 51c.	Mar 29-May 21			
Walt Consol., El Dorado Canon, A. T.,	Meeting Mar 13			
Young Harmon, El Dorado Co., Feb 14, 52c.	Mar 23-Apr 8			
Yosemite, Humboldt Co., Cal., \$1.75.	Mar 1-Mar 29			
Yellow Jacket, Gold Hill, div. 50 sh.	Payable Jan 15			

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

A. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, March 8, 1867.		
STOCKS.		
United States 3-10ths Bonds, June Issue.....	79 1/2	80 1/2
Legal Tender Notes.....	74 1/2	75
California State Bonds, 7s, 1857.....	90	92
San Francisco Bonds, 4s, 1859.....	100	102
San Francisco City Bonds, 6s, 1859.....	80	85
San Francisco City and County Bonds, 5s, 1858.....	72	74
San Francisco City and Co. 5s, 1854, 7s, 1856, 8s, 1858.....	80	82
San Francisco City and Co. Bonds, 7s, 1856.....	80	82
San Francisco City and Co. Bonds, 7s, 1854.....	80	82
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GAS COMPANIES.

San Francisco Gas Co.	69	70
Sacramento Gas Co.	—	60

RAILROADS.

Sacramento Valley Railroad.	—	40
San Francisco and San Jose Railroad.	—	45
Omnibus Railroad.	62½	—
Central Railroad.	49	40
North Beach and Mission Railroad.	49	60
Front Street, Mission and Ocean Railroad.	—	18

BANKING INSTITUTIONS.

California Loan and Savings Society.	—	98
Bank of Pacific Accumulation Loan Society.	—	98
The Bank of California.	134	—

INSURANCE COMPANIES.

Fireman's Fund Insurance Co.	102½	105
Pacific Insurance Co.	118	120
San Francisco Insurance Co.	120	129
Mechanics' Mutual Marine Insurance Co.	490	490
California Insurance Co.	1550	1750
Union Insurance Co.	102½	110
California Home Insurance Co.	—	92



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

The comparatively brief summary of mining news which our columns have presented for the past two weeks, is due to the persistent storm which has been prevailing throughout the State. It is reported from all quarters as having been the most severe on record. The last accounts from Meadow Lake, Nevada county, were to the effect that the snow was eighteen or twenty feet deep on a level at that place. In Sierra county, it is said to be from eight to twelve feet. Twenty-two inches fell during the late storm at Carson City. The Summit portion of the Placerville route to Washoe was completely blocked from February 20th to March 5th.

Although mining in many places has for a time been stopped, the snow fall will, undoubtedly, be on the whole to the advantage of the mining interest, in furnishing an abundant supply of water throughout the season. In the agricultural districts, the grain crops promise remarkably well, the amount of rain there having been proportioned to the amount of snow in the mining region. It is reported, too, that an abundant fruit crop is expected; every indication being at present favorable.

It is probable that more attention will be paid to quartz mining in California during the coming year than ever before. On all sides mills are being projected, and prepared for transportation as soon as the spring opens and the state of the roads will permit. "Rich strikes" are heard of in places long looked upon as "played out." Returning miners from Montana, Idaho and British Columbia, begin to look upon California as the place after all, and to wonder how "distance could have lent such enchantment to the view," as to so completely blind them to the "good things" which they now find to be had for the grasping; and they are content to make for themselves homes where they cannot only mine, with as good prospects of success as in the distant and inhospitable regions which they have left, but can do it under the shade of vine and fig trees of their own.

## CALIFORNIA.

## Amador County.

From the *Ledger* of March 3d: A. C. and J. C. Ham, Jr., struck diggings on New York Gulch from which they took over four ounces of gold dust this week.

From the *Stockton Independent*: The Lancha Plana Copper Company gives notice that proposals will be received up to the 25th instant, to run fifty feet of tunnel or drift in the claim. We understand it is the intention of the company to put on a large force in the spring, and prosecute the work in earnest.

## Calaveras County.

From the *Calaveras Chronicle* of March 2d: The labors of Paul, Hoerchner & Co., who have been engaged for the past three years in running a tunnel in their claim in Chile Gulch, were rewarded last week by striking through into pay dirt. The task of prospecting this claim was a herculean undertaking. It was estimated that it would take three years, and cost \$30,000, to run a tunnel to the lead, and time has proved that the calculations were nearly correct. The tunnel is eight hundred and thirty-six feet in length, and throughout the entire distance has been blasted through bedrock hard as adamant. During most of the time occupied in its completion, labor has been performed night and day, and from the time a pick was first struck in the claim, up to the present, work has never been interrupted.

Letter from Copperopolis to the *Stockton Independent*, dated Feb. 18th: The Union, Keystone, and other companies are hard at work. We are told that the former company have now as much ore in their different drifts and tunnels as they will be able to find transportation for during the next three or four years. The engines, machinery, and in fact the whole paraphernalia of this and the Keystone, adjoining, are of the best description and finished in fine style. The Caledonia, Empire, Inimitable, and other companies are also at work, though apparently with no very great success so far.

## El Dorado County.

From the *Placerville Democrat* of March 2d: The Valadoro Company, at Grizzly Flat, has a splendid 40-stamp steam mill in operation. The company have a shaft upon their claim 150 feet in depth, and at this depth the ledge is seven feet wide. The hoisting work connected with the shaft is complete in all respects, while the character of the rock taken from the shaft, has been too well tested to admit of any doubt of the complete success of the enterprise.

Letter to same from Georgetown, says: The old Slagger claim, at Spanish Dry Diggings, near this town, is turning out some remarkably rich specimens. The claim is now owned by W. Roush, John Wade, G. W. Sempers and G. W. Hunter, who are prospecting it thoroughly. The specimens taken out of it are dotted all over with gold, and the sulphurets are full of it. The old Taylor lode, near this place, is also turning out finely. Mr. Green, of San Francisco, bought it a few months ago; paid \$3,000 for it, and would not now take ten times that sum for it. It is about four feet thick and well defined. Gold is regularly diffused all through the whole ledge. Out of six pounds of unpicked quartz, taken at the depth of fifty-seven feet, Mr. Green got eleven dollars and sixty-ninety cents. The quartz was crushed in a common mortar and is considered only as a fair sample of the whole.

From the *Courier* of same date: Mr. Shepherd showed us, this week, the result of the first run made with the mill just erected on his lead on Poverty Hill. The amount of gold was a little over \$200, from four tons of rock. This is a very good showing, but should not be taken as a fair test of what the mine is, as five pounds of quicksilver was lost from the pans during the run, which of course contained more or less gold.

## Kern County.

From the *Havilah Courier* of Feb. 23d: The Burning Moscow mine, New El Dorado district, was sold a few days since to Jasper Harrold, of Visalia, for \$8,500. The mine is about being worked by Messrs. Taylor and Thomas. The Burning Moscow is one of the best mines in the county, and is about twenty-five miles from this place.

## Nevada County.

From the *Gazette* of February 27th: The Brush Creek diggings, now owned by Hall & Peabody, were located in 1851. The ground is a little over a mile in length, and the mining is done entirely by ground-sluicing. A gentleman who knows, informs us that the claims have yielded to the different owners over three million dollars. The claims owned by Lones & Co. had yielded over \$300,000, when they sold out to Hall & Peabody in 1865 for \$28,000—being a part of the ground now held by the latter. The gross yield of the diggings in 1866 was \$32,800, the profits amounting to \$12,000; and it is expected the claims will yield better this year than last.

From same of March 1st: Rodney Wing recently struck a rich quartz ledge at Wood's Ravine. He had been working a gravel claim, in which he found many rich quartz specimens, and at length struck upon the ledge, which is about a foot in width and shows much free gold.

Same of 2d: We saw yesterday a bar of gold valued at a little over \$1,500, the result of a clean-up of 120 tons of rock from the mine of the Nevada Quartz Mining company. This gives a yield of twelve and a half dollars a ton. From Wm. M. Ratcliff, superintendent, we learn that during the year 1866, the mine yielded 5,000 tons of rock, which crushed in the mill \$42,000, while the sale of the sulphurets amounted to \$8,000 more.

From same of March 5th: A party of sixteen men arrived in town yesterday from the mill and mine of the Jim company, in Eureka township. They had to suspend operations on account of the deep snow. From one of the party we learn that they completed the mill and crushed some two hundred tons of rock; but not having a supply of wood on hand, they were compelled to stop the mill some time ago. The snow is some twenty feet deep at the mine. Two or three men only were left at the mine, to take care of the property until the snow melts off sufficiently to enable them to resume operations.

From the *Transcript* of March 2d: The snow at Eureka is still seven feet deep. The canals and ditches in the neighborhood have been blocked up, and many of the flumes have been carried away by slides of snow. At the upper camp on the Miner's ditch, snow fell to the depth of fifteen feet during the late storm. Jackson's mill, at Eureka, was crushed by the weight of snow, and the building totally destroyed. The storms have seriously interfered with mining operations, and most of the mills have stopped on account of the impossibility of getting wood and rock. The snows are heavier this season than they were ever known before.

Letter from You Bet, Feb. 22d, to the *Dutch Flat Enquirer*: There is plenty of ground to work by hydraulic-power for years, and the result will be good profits; but the great agent for working it—water—must be reduced in price before any substantial operations will be undertaken.

The great "Blue Lead," of which so much has been said, is now being worked more extensively and successfully than ever.

The famous mine owned by the Brown Brown Bros., is to this day the best paying claim on this divide. Large profits have been realized from this mine for the last two years. One of the brothers, H. K. Brown, has sold his interest in the mine to his brother, Judge Brown, has retired from mining with a fortune, and is now proprietor of the Grass Valley and Nevada Stage Line. Two years ago he was a poor man.

Mallory & Brother, adjoining the Brown mine on the north, have some excellent "paying dirt;" they are running their mill night and day, and work a force of twenty men, 9½ hour "shifts," and their profits are better every week.

M. J. Hydelliff, of Red Dog, is the owner of a 10-stamp mill. He has just commenced crushing, and as near as I can learn, the pay is good. He is working about twenty men on eight-hour "shifts."

From same of March 6th: Stiles' mill has been thoroughly overhauled and repaired, and the whole battery of eight stamps will be started up to-day. The mill is considerably improved, and its capacity has been doubled by the repairs. A lot of rock from the northern extension of the Star Spangled Banner mine will be worked first.

A lot of rock from the Liberty mine at Eureka is being worked in the arastra of Booth & Co., at that place, and is yielding handsomely.

The Young ledge at Eureka, owned by Black & Young, is being steadily worked, notwithstanding the snow, which lies nine feet deep at the mill. The ledge, four feet wide, has been stripped for three hundred feet. The rock is studded with fine gold. The company has one hundred and fifty tons of this rock at their mill, and can keep the mill constantly at work. They have an abundant supply of wood on hand.

EXCELSIOR.—From the *Meadow Lake Sun* of Feb. 23d: The snow has now reached the average depth of about eighteen feet. The Mohawk, California, Gold Run, U. S. Grant, Golden Eagle and other claims that have worked through the winter, are still at work, and do not experience the least difficulty.

The Mobawk and Montreal company have just got their mortar, a casting weighing 2,500 in place, having brought it from near Cisco, where it was left in the early part of the winter.

## Placer County.

From the *Dutch Flat Enquirer* of Feb. 27th: We learn it is the intention of the companies at Cañon Creek and Gold Run to work their claims day and night as soon as the weather will permit. The miners immediately in the vicinity of this place will also commence operations in a short time, the water facilities being better now than ever heretofore.

Letter to same from Colfax: Judge Heard, formerly of Sacramento city, has made a location of a vein of ore that prospects beautifully; it is wide and mostly sulphurets rock. He purposes erecting works upon the vein the coming season. The Rising Sun and Colfax companies are also locations near this place that prospect well; rock from the former has paid as high as \$55 to the ton.

Iowa Hill letter to same of March 2d: Our mining companies are now busy, and have fine prospects ahead. The Morning Star Company's little 6-stamp mill is turning out regularly from \$4,500 to \$6,000 per month; the Oriental mill at Wisconsin Hill has stopped until such repairs as are necessary can be done, and a tunnel run through a heavy bank of cement; the Lebanon Hurdy Gurdy mill is said to be paying better than ever before. Wm. Weisler, who owned a large interest in the old Jamison claim at this place, sold his entire interest a few days ago for eight thousand dollars; the claim is at present paying well. The Sailor Union, another one of our oldest claims, is at present paying well. Others, located at Wisconsin Hill, Monona Flat, Bird's Flat, Grizzly and Sucker Flats, and Elizabethtown, are being worked with fine prospects.

The Mountain Gate company at Damascus have been realizing for the past two years three thousand dollars per month, until the recent cave in their tunnel.

From the *Herald* of March 2d: The Wells' Quartz Mining company have recently had a crushing of twenty-five tons of their rock at the Welty steam mill. The yield was forty-one ounces of amalgam.

## Sacramento County.

From the *Folsom Telegraph* of March 2d: We hear of rich strikes and successful min-

ing in every direction in this neighborhood. Water is plenty, and every man that wants a claim can find one, and make good wages. No man need be idle now.

## Shasta County.

From the *Courier* of March 2d: Several assays have been made of South Fork rock during the past week, and the result has been encouraging. We were shown a gold "button" weighing one-fourth of an ounce, which was extracted from quite a small piece of rock taken from the Pacific lode. Another assay made from ore taken from the Ellsworth lode yielded \$92 in gold, to the ton.

The Potosi rock, at Muletown, is continually growing better as the shaft descends.

A Mr. French, at Chumtown, has averaged \$6 per day, reducing rock in a common hand mortar.

Kelly & Co.'s mill at Muletown is completed.

About Middletown, the miners are doing well. Mr. Kellner, who has been ground sluicing, picked up a piece of pure gold on Wednesday worth \$100. Several smaller pieces were picked up by the same gentleman during the winter. Heivner & Co. are doing well. Water is cheap and abundant.

Henry Ludwig, of the Ohio claim at South Fork, has been engaged for several months in running a tunnel. Last week he cut through the casing and struck as fine looking a lode, of gold and silver bearing rock, as has ever been found in the district.

We are informed that the placer mines on Mad Ox and Mad Mule creeks are yielding as well this winter as they did when first discovered. There is scarcely a claim worked on either stream that does not yield as high as an ounce a day to the hand, and some of them are yielding double that amount. The gold is coarse, and pieces weighing several ounces are frequently found.

## Sierra County.

From the *Downieville Messenger* of March 2d: The Higbland and Masonic Mining company at Alleghany, are reported as taking out about two hundred ounces per week. The company have breasts, one on each side of the tunnel, of about sixty feet each. The claim probably never was in a better paying condition.

Parties are at work opening the old Hook & Bell tunnel at Alleghany, with fair prospects of finding a paying ting.

The mining news is unusually meager from this region. The *Messenger* says the storm has been the most severe ever experienced there. Most of the roads have been impassable. The snow is some eight or ten feet deep.

## Siskiyou County.

From the *Yreka Union* of February 23d: At South Fork, Scott River, the high water has caused a suspension of work in a great many claims, but those in which work has been prosecuted are generally paying well. Pollard's claim, Messner & Co's claim, and the Chain-Gang claim are mentioned among those yielding well at present. It is said Messner & Co. took out about \$250 last week, to three men's labor. Timmons & Co. have been driven out of their drift by the water, but are at work on the outside.

Chapman & Peale, on Fox Creek, took from a drift they are running, some days since, a nugget of over forty dollars.

## Yuba County.

From the *North Californian* of Feb. 27th: The Pennsylvania and Jefferson Companies have resumed work. This last heavy rain stopped successful operations for two or three days. The prospects of both claims never looked more flattering than at present, and we may expect at an early day to record large dividends from Brown's Valley.

A Smartsville letter to the *Grass Valley Union*, Feb. 22d, says: The mining interest here is looking up. Pierce & Co., (Blue Gravel claims) have been running for some time past, and will soon clean up. The Pittsburg will also soon make a clean up, and the claims promise to yield well. The Blue Point Gravel Company have been at work for some time on their new tunnel, and do not expect to complete it for three or four years to come. It is in this tunnel that the experiment of blasting with nitroglycerine was first tried, it proving a partial success.

## ARIZONA.

Mr. W. C. Reed, who returned from Arizona a few days since, reports the discovery of very rich and extensive gold placers sixty-five miles southeast from Prescott. A party who came into Prescott for supplies from the new mines, brought abundance of gold dust, and reported that the placers were so extensive as to afford work for some thousands of men immediately.

The San Bernardino *Guardian*, of a recent date, says: A party of prospectors have been



at work on Black Cañon, and discovered diggings which pay eight dollars per day.

A lot of copper matte from the Great Central mine at Williams' Fork, left San Francisco by the steamer of February 28th for New York.

#### BRITISH COLUMBIA.

From the *Victoria Colonist* of Feb. 23d: The good news from Cariboo is confirmed. The Stewart Co. have struck a well defined ledge—gold visible throughout, and the Washburne struck the ledge on the 3d inst.; it is reported even richer than the Stewart.

On William Creek things never looked so well. H. can sell his interest in the United Company in Conklin's Gulch, for \$10,000. They have struck the old Eriesson lead, and it is immensely rich.

A gold and silver quartz discovery is reported near Cowichan. The discovery of gold quartz was made by an Indian, and created considerable excitement. The discovery of silver was made by a settler named Davis.

A letter from William's Creek, Cariboo, to the *British Colonist*, dated Feb. 3d, says: We are in the middle of excitement here again. All Conklin's Gulch has been fresh staked from the bottom almost to the top, on both sides. The United Company made very heavy pay before they were obliged to lay off. There are a great number of tunnels running. The United are running a fresh tunnel. The Home Stake have run one, but at too high a grade, and have commenced to run a fresh one. The Hood Company have tenders out for a fresh tunnel. The Homo Ticket is in considerable favor; got a good prospect on the rim. They are now putting a new shaft down to strike the channel.

On Canadian Creek there has been very great excitement, and it has been staked off from top to bottom.

A telegram from Victoria, March 5th, says: News of the most cheering character was yesterday received from the Cariboo mines. Several rich strikes have recently been made, and there is every indication of a very prosperous season.

The Government has offered a premium of \$50,000 for the first quartz mill erected in British Columbia.

#### CENTRAL AMERICA.

*El Porvenir*, published at Rivas, Nicaragua, gives this description of the Jabella mine, purchased last year for the Central American Association. It is situated in the Chontales district of Nicaragua. "The lode is of steady, uniform richness, and will hold out at least half a century, even if it has to feed all the machinery that can be worked with the available water power. It runs from east to west, is generally from eight to ten feet, but in some parts as many as twenty feet wide, and it contains gold and sulphurets of silver. From the general samples taken and washed, the average produce of gold is above one ounce to the ton, but never less; and in some places, as, for instance, in the bottom level, forty ounces the ton. The greatest depth attained in the present workings is fifty yards, and at that depth the lode is decidedly richer than it is toward the surface of the mine."

#### IDAHO.

From the *Owyhee Advertiser* of Feb. 16th: The Silver Cord mine is said to be showing a body of rich ore in the third level, and also on the face of the second. There is no doubt of the fact that ore taken from this ledge has yielded at the enormous rate of \$2,600 per ton.

The contractors to run the No. 1 Hays & Ray tunnel 400 feet, have already commenced work.

Mr. Lewis, of the Cosmos company, is now applying a new process with rich results.

Flint district ores which yield by common mill process only fifty-two dollars per ton, give \$404 by the process of Mr. Lewis. This great advance in yield is the result of saving the sulphurets. The same ore when roasted only gives a product of \$223 per ton. The process of saving the sulphurets is much easier than the old method, and avoids roasting and amalgamation in pans.

In Flint district, Carter & Co's mill is crushing rock, and the machinery works well. The roasting furnace is ready, except the chimney—and but for the severity of the weather that would have been completed. The ore being crushed is from the Rising Star. The treatment will be first to crush, then to roast, and lastly to amalgamate in the usual way.

In Boise county the ditches are so filled with ice and snow, that weeks will be consumed in clearing them in the spring.

#### NEVADA.

##### Black Rock.

From the *Territorial Enterprise* of Feb. 20th: Reports from the Black Rock mines still continue very flattering. A mill will soon be in operation in that region. We

believe that these mines will make much noise in the mining world before another year rolls round. The ores of Black Rock present rather a strange appearance to those who have been accustomed to see few ores but those taken from the Comstock lode, but they seem to be fat.

##### Esmeralda.

From the *Virginia Tresspass* of Feb. 20th: At Pine Grove, the new camp between the east and west branches of Walker River, we learn that a mill, partly owned by Captain Pray, has commenced to crush ore from the Himalaya and Midas mines, and will make the first "clean-up" about the first of March. Two other mills will be erected during the coming months of spring, and it is believed by all the settlers that the country is one of exceeding mineral richness. Wood and water are abundant.

##### Humboldt.

From the *Register* of February 16th: At no period in the history of our county have the prospects of our mining interests looked more flattering than at the present time. Among those in this district whose prospects of a rich strike at an early day look the brightest, are the North Star and Agammon companies, in both of which Eastern capitalists are interested. Work on these claims goes on steadily day and night, and seams of ore, of a superior quality, have been cut in the tunnels of both companies. Superintendent Loomis, of the North Star, last week forwarded five tons of ore to the Pioneer mill, which yielded \$523. The Agammon has a fine looking pile of ore at their dump, which will, on the return of Superintendent J. C. Fall, be worked by mill process.

The Nevada Star company are now working the Yankee mine. They have been at work for some time driving in a long tunnel, which will intersect the mine about three hundred and fifty feet from the surface. They believe they are now in the neighborhood of the vein. When it is reached they propose to erect reduction works upon their mill site near the mine on Star Creek, where fine water power can be obtained for trifling cost, for large and extensive works.

James T. MacLean, of the Sheba mill, made another shipment, by Wells, Fargo & Co's Express, of 798 ounces of fine bullion from the Yosemite mine.

##### Reese River.

From the *Reveille* of Feb. 16th: The shipment of bullion obtained from the ore extracted from the Florida mine during the month of February, was made to-day through Wells, Fargo & Co. The amount is \$12,531.95, contained in twelve handsome bars. The ore was reduced at the Keystone mill, and was worked up to 88½ per cent., and the bullion averages 825 in fineness. We are informed that the yield for the month of January exceeds the disbursements fully \$6,000. Major Sherman's estimate for the yield of bullion for the current month is \$20,000. This is one of the razor blades! The vein has suddenly increased in width to fifteen and twenty-two inches, and is loaded with rich mineral.

Same of 18th: The stage from Belmont brought in on Saturday five bars of bullion, valued at \$4,670.27, from the mill of the Twin River company.

From same of Feb. 20th: In Reveille district, the Rutland and Reese River Company is pushing work forward with great energy. Some ten tons of good-looking ore have been taken out of the Mohaska ledge, and about the same amount from the Bay State. These claims are being well opened, and the indications are favorable. In the judgment of our informant the ore obtained from these ledges will yield \$100 per ton. The mill is on the western side of the valley, about ten miles from these mines, and is convenient to those of the Hot Creek district. The location is excellent, embracing a good water-power and a large tract of timber, beside having in its vicinity an extensive salt deposit. The mill building is nearly completed, and the machinery is being put in place with dispatch.

Same of 21st: We learn from Col. Buel, who arrived by the last stage from Belmont, that the High Bridge and Transylvania are looking heartily. Plenty of very rich ore is being extracted from the Buel claim on the former. The mill has been idle for some days in consequence of a broken pump, but that had been replaced by a new one, and they were to resume work on Tuesday last.

Same of 22d: A number of the Hot Creek claims are being developed. . . . Two bars valued at \$1,920 came in last night from the Twin River company's mill.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Virginia Tresspass* of Feb. 19th:

The Union mill, at Gold Hill, has been stopped. Cause reported to be an attachment.

The new engine and machinery at the Plato mine, Gold Hill, have been erected, and are now running in fine shape. Through the Plato mine ore is being hoisted from the Bowers and Eclipse mine, and, at present, 100 tons are raised each twenty-four hours.

The Dana, Island, and Ophir mills, of Dayton, which have been working Savage rock, have all stopped. The Franklin, which has been running on rock from the Yellow Jacket mine, has stopped; and the Illinois, supplied from the same mine, is out to-day. The Sacramento mill, formerly running on Empire rock, has run out and is now running on tailings. The Excelsior is also out of rock, and employed on tailings. Weston's mill is running, supplied from Crystal Palace mine. Dayton mill, J. D. Winters & Co., running on rock from the Consolidated.

Same of 20th: Some prospectors, Byron, Stafford and others, made what promises to prove a valuable discovery, a few days ago, about 2½ miles southeast from Dayton. The discovery is a ledge of about fifteen feet in width, showing silver sulphurets, and apparently very rich. It appears to be a well-defined vein, and is in an excellent place for easy working—an abundance of wood and water within easy reach.

#### Silk—Its Manufacture.

Much has of late been said in reference to the raising of silk in the United States. It will, undoubtedly, be extensively done. But it takes time to inaugurate the enterprise, by growing the mulberry trees to a sufficient size to bear the necessary striping. Why do not some of our manufacturing capitalists meanwhile commence the importation of raw silk, upon which there is no duty, and produce here the fabrics for which we are paying such extravagant prices? The duty upon manufactured silks is enormous. It seems strange that this manufacture has not been undertaken more extensively in the United States. We understand that Messrs. Newman and Myers do not expect to rely solely, for the present, upon California cocoons to keep their new silk factory in operation, although it is probable that they can do so in the course of a year or two.

A correspondent of the *Boston Journal* writes from Florence, Italy, as follows:

"This whole section of country is more or less engaged in silk raising. The plains of Lombardy are planted with mulberry orchards, and at the foot of each mulberry tree you see a grape vine. Very little of the silk raised is manufactured here. There are a few manufactories of silk goods at Milan, but nearly all of the raw silk is purchased by Swiss merchants, taken over the Alps to Zurich and Northern Switzerland, manufactured there, and then shipped to the United States. The American Consul at Milan, Rev. Mr. Clark, informed me that he has been approached by some of the Milan merchants, who desire more intimate commercial relations with the United States. They wonder that the Americans, who, they say, are the most ingenious people on the earth, do not manufacture silk, instead of paying the Swiss for doing it, and then paying a heavy duty upon the manufactured goods."

The above is directly to the point. We believe it would be a profitable business to import Chinese and Japanese cocoons, or at least the raw silk from them, and manufacture it in California.

**FOSSILS IN IDAHO.**—The skeleton of an immense animal was found last summer on Slate Creek, Salmon River region, Idaho. It was about forty feet below the surface. It crumbled to pieces when an attempt was made to remove it. Two teeth remained, one of which weighed six pounds eight ounces. One who was present thus informs the *Alta*.

**CANALS IN CALIFORNIA.**—Mr. McRuer has introduced a bill into Congress to grant ten sections of land per mile to a company which proposes to make a canal for navigation and irrigation from Red Bluff to Suisun Bay, and it is said that a similar bill is soon to be introduced for the benefit of a canal from King's River to Suisun Bay.

**STILL THERE.**—A scientific man, who visited California in 1819, published a volume on its flora. He mentions finding the only specimens of a certain flower which he ever met with, at San Diego, near the sea and "beneath a shelving rock." Professor A. Wood, who was at San Diego last summer, determined if possible to find the rare plant. After considerable search he came to "a shelving rock" by the shore, and upon looking over it he beheld the object of his search in full bloom, and on the very spot where it had flourished forty-seven years before.

**"E PLURIBUS UNUM—ERIN GO BRAGH."** We have been presented by the author, Mr. J. M. Doherty, with a copy of a little book entitled "Paddy Pungent; or, a Rambling Irishman right from the Ould Sod." No comment is necessary upon this publication. The title alone tells the story.

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W. H. EWER,.....SENIOR EDITOR.

O. W. H. SMITH. W. A. EWER. A. T. DEWEY.  
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**Mr. E. L. Smith**, is a duly authorized Agent for this paper. February 25, 1897.

## San Francisco:

Saturday Morning, March 9, 1867.

## Notices to Correspondents.

**TEURON.**—The gold mines of the Ural are very ancient. Pallas, in his travels, describes the remains which he examined at these ancient workings, which were subsequently visited and more fully described by Lepechin and Gmelin, from which it would appear that they had been originally wrought by a very primitive and probably nomadic people, possibly the ancient Samatians, more generally known under the denomination of Scythians. The extent of the ground covered by ruins shows that the workmen engaged must have been numerous; a careful inspection of the workings, show that mining was in a very rudimentary condition. Some implements found were of so singular a character, that no one has yet been able to satisfactorily explain their uses. Wedges and hammers of copper have been discovered which, on analysis, have been found to be devoid of gold. These implements had been cast—not wrought. In place of sledges, large stones of an elongated form were employed, many of which had marks, which showed the manner by which the handles were fastened to them. In some cases it would appear that the gold had been picked out of the vein by means of picks formed of boars' tusks, and gathered in leather bags or pockets, several of which have been found. Some of the pits worked by these "old men" have a depth of 120 feet, are generally bell-shaped and about seven feet in diameter. The passages and supports are described as being well executed, but the former are narrow and low, possibly because this ancient race was of diminutive size. In one instance, it was found that where the shaft had been sunk to a considerable depth, the work appeared to be abandoned after penetrating a few feet of hard stone, which was barren. The natural pillars left to support the roofs are in numerous instances still effective. In other instances, where the supports have given way, human bones are sometimes found, probably the remains of the primitive but unfortunate miners. Numerous fragments of earthenware are scattered around the vicinity. Probably only the richest ores were selected, which in some instances must have been smelted in the mine, as under the debris of one of the supports which had fallen in, melted copper, and the apparatus for smelting it have been discovered, and many such have been found around the mouths of these pits. The smelting, whether in the mines or on the surface, was performed in small furnaces, of which Gmelin observed near a thousand in the eastern part of Siberia. They were constructed of red bricks, in the remains of which pieces of copper have been found weighing from two to three pounds each. The height and breadth of these furnaces were about two feet, and the length three feet. Holes were found in the front and back; but which were for the purpose of conveying the blast could not be ascertained. Large heaps of scoriae lay around these furnaces, but no one as yet has been sufficiently curious to ascertain by analysis what, or if any metals can be traced in these ancient slags. A long period must have elapsed since these ancient metallurgic works have been abandoned, as the roots of large fir trees are often intermixed with the stones that abut against the sides of these furnaces.

## Gold Amalgamation—The "Flouring" of Quicksilver.

One of the largest sources of loss in gold mining, is undoubtedly due to the "flouring," and consequent loss of quicksilver. It is not the loss of the quicksilver alone that constitutes the waste; for, as is well known, quicksilver, passing off in that condition, carries away with it a considerable amount of gold—which amount depends upon the mechanical fineness of that metal, and the proportionate quantity of the same in the quartz which is being worked. This loss does not commence when the charge is first placed in the battery or pan; but only after the crushing or grinding process has been continued for a considerable length of time, and the quicksilver has become more or less charged with the auriferous product. Any process of grinding or other violent agitation, breaks up the quicksilver into infinitely minute globules, which refuse, with more or less persistence, to reunite. These globules are so very minute that they readily float on the surface of the water, and are easily carried off with it to waste. This tendency to division is a great objection to the use of quicksilver in the batteries, which would otherwise constitute a most valuable aid to the process of amalgamation. We apprehend, however, that quicksilver so used, in very small quantities and at frequent intervals, will always be found very advantageous. None but the very cleanest, however, should be employed for the purpose. A very soft sodium amalgam would doubtless be better than quicksilver alone—not that the sodium would remain with the quicksilver for any appreciable length of time after being placed in the battery, but because quicksilver so used would be more likely to be free from the various oxides with which it is almost invariably accompanied, to a greater or less extent. It is well known that the slightest coating or touch of quicksilver to a particle of gold, is quite sure to cause it to be safely incorporated into the first body of amalgam with which it comes in contact. Hence, if the gold in the battery can be rendered thus sensitive to the action of the quicksilver, when it reaches the rifles or amalgamators, an important advantage has been gained. Perhaps the best way to use it in the battery is to mix it, as above, with the rock on the platform.

Some millmen have altogether discarded the use of pans, in consequence of the tendency which the friction produced by grinding has to cause this "flouring." This has been done, in some instances, after the pans have been purchased and erected at great expense; while resort has subsequently been had to the old plan of amalgamating without trituration. Such we should call very bad management. We look upon trituration of either a portion or the entire sands from the battery, as an indispensable requisite for a proper treatment of auriferous ores. Many use blankets, and put only the "blanket washings" through the pans. No doubt this process is sufficient for some kind of ores; although we could not recommend it in all cases—as, for instance, where very fine gold is found pretty generally disseminated through clean quartz. The small quantity of gold contained in sands of such rock will not give a sufficient specific gravity to the particles of sand to retain them on the blankets. Blankets are least useful in proportion to the fineness of the auriferous product.

We have little faith in any very free use of quicksilver in pans. Trituration should be either done apart from quicksilver, or the charges treated should be subjected to a careful after-manipulation, to collect the quicksilver—a large portion of which will be most finely floured. Very hot water and caustic soda or sodium amalgam, is an almost indispensable requisite to recover such quicksilver, and the gold which it may contain. A rapid manipulation of the mass

is unavoidably attended with considerable loss. Generally, the agitation for a while, and subsequent quiet for settling, are the only conditions of success.

"Flouring" is not produced altogether by friction; although friction is a great aid to other causes. It is no doubt often caused, to a certain extent, by chemical action. The sulphur, lead, copper, iron, arsenic, and other minerals with which gold and silver are almost always associated, furnish, by their partial decomposition, a film coating of oxide or other matter, to the minute globules of quicksilver, which destroys their tendency to unite; and as the trituration proceeds, these globules are continually being divided and sub-divided, until they are so completely "floured" that the "coating," above described, constitutes their chief mass, and renders them so light as to float on the water and pass off, whenever there is an escape, as readily as so much fine sawdust would wash away.

When thus divided, no mere mechanical action can remove this coating of oxide, so as to permit them to reunite. A chemical action must supervene. To this end we know of nothing better than "sodium amalgam," which seizes with avidity upon the oxygen contained in the "coating" of the particles; which being removed, an instantaneous union takes place. Quicksilver, no doubt, often forms a sulphide, in the process of trituration, from which it is recovered with still greater difficulty.

There is one important fact, however, connected with the "chemical action," which should be always borne in mind. The sodium employed to free the "coating" of the particles of quicksilver, while it takes up the oxygen leaves the late oxide in a metallic form, free to combine with the quicksilver, if it is one which will form an amalgam therewith, as is the case with copper, lead, etc. These metals, when they have accumulated to any considerable extent, must be removed by careful retorting. It will thus be seen that sodium does not purify the quicksilver, as many suppose; it merely removes the oxygen from the oxides, which are a greater detriment than the metals resulting from those oxides. The metals can only be removed, conveniently, by retorting.

A series of careful experiments to ascertain the true nature of the "flouring" of quicksilver, and the condition under which it occurs or may be avoided, would be of great public advantage. Such a work should be undertaken, carefully carried out and reported upon, at the expense of the government, and for the benefit of the mining interest. The advantages would be well worth the cost.

If perfectly clean quicksilver could be ground with clean sand, in a clean pan, without any "flouring;" or, if pulverized quartz containing gold, but entirely free from the baser metals in any form, can be similarly worked with the same result, sufficient proof would be adduced to show that friction, alone, is not the cause of this annoying phenomenon, and the conclusion would be inevitable that chemical action was at the bottom of it. Then the inquiry would be, as to the precise chemical changes which take place; what may be their immediate exciting cause; whether or not there is any galvanic-electric element involved, etc., etc.

It is more than possible that the mutual action of the metals, the one upon the other, or of the pan upon the metals, or *vice versa*, may have an important bearing in producing a chemical action, galvanic or otherwise, which may in some measure be partially or entirely neutralized. However this may be, it is sufficient for us to know that much difficulty exists in this direction, which is not well understood, and the solution of which is a matter of such general interest as to fully warrant a careful examination and elucidation at the public expense. In this connection, we realize the great importance

of a national assay office, one of the duties of which should be the investigation of such matters as the above, with many others of a like nature, which are constantly coming up.

The leading governments of Europe are fully aware of the great national importance of such establishments. The Prussian government is now greatly enlarging its facilities and efforts in this direction. That government is now constructing two immense laboratories, one at Berlin, the capital of the new Empire, and the other at Bonn, to be convenient to the celebrated University in that city. These establishments will be, each, about two hundred feet square, and will be under the chief direction of Prof. Hoffman, the distinguished chemist and author, who has lately resided and lectured in London. These are being fitted up for almost every kind of experimental work, in chemistry and metallurgy, with lecture-rooms, museums for specimens, etc., etc., almost regardless of expense. Every question of public interest, in chemistry or metallurgy, will there be carefully studied and analyzed, and the results made free to the public. Our own country can never hope to compete successfully with other nations in the economical applications of the arts and sciences, especially in the great underlying sciences of chemistry and metallurgy, until more liberality and intelligence is manifested in establishing public laboratories of this kind for the use and benefit of the people.

"THE FINANCIAL ECONOMY OF THE UNITED STATES ILLUSTRATED, and some of the causes which retard the progress of California, demonstrated." This is a new book of 350 pages, by John Alexander Ferris. It is inscribed to "The friends of our constitutional currency—gold and silver coin; to the advocates of justice and right" etc., etc.

The object of the work is fully apparent from the above. The constitutionality of the California Specific Contract Act is defended. The whole question of currency, paper and metallic, with the relation of Government to it, is taken up. A chapter is devoted to the tariff, first to the mineral lands, and one to the Pacific Railroad, and their respective relations to the main question considered. The subject is a most interesting one, not only to Californians, but to all interested in the general subject of financial economy. Published by A. Roman & Co., of this city.

**MECHANICS' INSTITUTE—REGULAR MONTHLY MEETING.**—This was held on the evening of the 7th inst. Reports of committees were read and approved. The Annual Report of the Treasurer was read and accepted. That of the President was ordered spread on the minutes, and 1,000 copies printed for distribution among the members. A committee of three was appointed to report at the next meeting a series of resolutions, expressive of the views of the Institute on the proposed Sutro Tunnel, and an effort to induce Congressional action in aid of it. The project of holding an Industrial Exhibition this year, to aid in liquidating the debt of the Association, was debated, and the President, on motion, was requested to see the owners of the new Pine street market building, in regard to renting the same for a few weeks, before it is opened as a market.

**THE BULLION YIELD FOR FEBRUARY.**—By reference to the *Weekly Stock Circular*, which will be found in another column, it will be seen that the bullion yield for February, of six of the principal mines on the Comstock lode, amounted to \$564,000—as follows: Crown Point, \$115,000; Yellow Jacket, \$38,000; Chollar-Potosi, \$100,000; Imperial, \$116,000; Gould & Curry, \$55,000; Savage, \$80,000 in dividends and \$60,000 carried over in cash surplus.

**BENJAMIN SILLIMAN**, the distinguished Professor, arrived on the last steamer from the East, on his second visit to this State.



## The College of California.

Quite a large gathering of the literary and "solid" men of California was held at the Board of Supervisor's room, in the City Hall, on Tuesday evening last, to originate measures for the permanent endowment of the College of California. This institution has struggled along for fourteen years, under all the disadvantages incident to a new country, and with very little assistance from the general public, until it has finally attained a standing and importance, most creditable to itself and the State, and highly encouraging for the future. It has graduated three classes, and fully established its curriculum. It has acquired a site for its future and permanent location, which has no superior for salubrity, convenience and general excellence on the entire Pacific coast. It has secured the esteem and respect of all classes of our citizens, and has already gathered around its young existence, associations and hopes of the most interesting and encouraging character. In its efforts to sustain itself and to do for itself, it has fully earned the right to exist and to look to the public for that aid and assistance, without which no similar institution ever did or can acquire a position of large and comprehensive usefulness. It is, and it is intended to be, the people's college; and the people, from San Diego to Puget Sound, should unite their efforts to raise it to the dignity and importance of a University of Learning.

We need, and must have a University on this coast, and the meeting on Tuesday evening was a most gratifying and promising evidence of the earnestness of the people in this matter. Clergymen of all denominations, people of every profession and almost every calling, merchants of "solid" pretensions, young men of small means, but big hearts—big in hopes and resolves for the future—were there as one man, all animated with one purpose—to institute measures for the permanent endowment, and making the first College of California, not only what it is in fact, but what it should be. The Rev. Dr. Stebbins presided, and made a most excellent and powerful appeal in behalf of the College, at the head of whose Board of Trustees he has been placed. He was ably seconded by Dr. Stone, the Rev. Messrs. Willey, Benton, and Messrs. Thomas Hardy, J. W. Stowe, I. P. Rankin, J. W. Dwinelle, William Sherman and George Barstow. The utmost enthusiasm prevailed, and a firm resolve was manifested to carry out to the letter, the work initiated—to raise a permanent endowment fund of at least \$100,000. Of this amount, \$20,000 is already pledged in four subscriptions of \$5,000 each. Several other \$5,000 subscriptions are confidently expected. Quite a number present intimated their intention to put down large and liberal amounts, after the \$5,000 men have all come in.

With this aid, and their present property, the College will be able to get along very respectably for a while. It is well known to some, at least, and perhaps it is not improper to make this public mention of the fact, that wills are already in existence, and of which there is no human probability of any change, which must, in the nature of things, soon bring the College nearly a hundred thousand more. It is, moreover, confidently expected that the munificent Congressional appropriation for an agricultural and mining school, must necessarily fall into the care and keeping of this institution. It would be next to throwing away that fund to make any other disposition of it.

We have here a nucleus, around which are clustering the highest literary associations and hopes of the State. A beginning has been made where the lovers of science, who would imitate in some degree the noble example of the munificent Peabody, may build for themselves monuments more noble and more lasting than brass or stone, and perpetuate their names forever in the grateful hearts of all coming generations.

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## California Academy of Natural Sciences.

REGULAR MEETING.

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President in the Chair.

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Messrs. William Norris, J. M. Sibley, John E. Nyström, Cornelius B. Miller, Ross E. Browne, Theo. P. Painter and Captain Henry Pickel were elected resident members.

Mr. William H. Dall, now collecting in Russian America, was proposed for Corresponding member, and Messrs. Robert Hagen, Dr. Bauer, Dr. Sharky, Dr. L. C. Lane, J. C. Pelton, E. Brooks, E. H. Holmes and W. K. Rowell, were proposed for resident membership.

*Donations to the Cabinet:* Specimens of Silicate of Alumina from Six Mile Cañon, Nevada, presented by Dr. Lanszweert; specimens of petrified wood from Sonoma county, by Dr. A. Kellogg. Dr. Kellogg also presented samples of the coffee berry, and offered seeds to any party who desired to experiment in the cultivation of the coffee shrub. The Doctor expressed doubt as to whether it could be successfully cultivated in this vicinity for tea, but it would make an ornamental evergreen bush for the garden.

The same gentleman called attention to the fact that trap-door spiders abound on Telegraph Hill. He exhibited a lump of earth from that locality, containing the burrow of one of these spiders, covered with a little trap-door hung on a hinge. The trap-door was about a quarter of an inch in diameter, and the burrow was somewhat smaller. The spider, though small, is of the same genus as the tarantula, and constructs his home on the same principle.

*Donations to the Library:*—Lea's Conchology, Volume XII, presented by the author. Congressional documents presented by Hon. John Conness.

Prof. Whitney read an interesting paper on the scientific character and services of Prof. Bache, late Superintendent of the Coast Survey. The Professor stated that the successor of Bache, Prof. Pierce, is an eminent mathematician and astronomer; and he regarded his appointment as a proof that the Coast Survey will hereafter be conducted with as much ability and thoroughness as heretofore. Prof. Pierce has long been connected with the Survey as adviser, and will ably continue the work so well begun by his lamented predecessor.

R. E. C. Stearns read a paper on the annual period of inactivity or sleep peculiar to snails, which will be found on the second page of this paper.

## BOTANY OF CALIFORNIA.

Prof. Bolander, Botanist to the State Geological Survey, made some remarks on the study of the botany of California, giving a list of those who have done most in the study of our indigenous vegetation. From 1792 to 1865, 73 years, 1,600 species were collected by 80 botanists. Of these 1,600 species, 74 per cent. are found in the collection of the State Geological Survey, and of these five per cent. are now to science, and eleven per cent. are new to California. The Professor criticized the publications and assertions of Prof. Wood, who lately visited this State, very severely. The Professor's criticisms were very humorous and sarcastic. He showed that the latter while here, could not possibly have done all he said he did in the way of identifying species during the time he was here, even if there had been so many species as he pretended to find. He quoted eminent authorities to refute Wood's statements, made in a letter to the *Bulletin* in June last, that the species are abundant here, and that our vegetable structures are very delicate. He called attention to the criticisms by Dr. Gray, in *Silliman's Journal of Science*, volume 20, page 129, and volume 32, page 129, in which different books, published by Prof. Wood, are exposed and condemned for ignorance of bot-

any and for violation of the rules of careful and honorable authorship.

## ALTERATIONS IN THE RAINFALL.

Dr. Henry Gibbons presented a diagram representing the average of the rainfall on every day from the first of October to the first of June, for seventeen years. This diagram showed a remarkable alternation. About the 8th and 21st of October, the 25th of November, from the 24th of December to the 21st of January, the 26th of February, the 27th of March, the 16th of April, and the 1st and 20th of May, the most rain fell, and the least about the 15th of October, the 1st of November, and the 3d of December, the 1st of January, the 15th of March, the 8th and 20th of April, and the 10th of May. He had also made a diagram to prove that the moon had no influence on the weather; but after he had it done, he found that the proof was just the other way. The table showed that heavy rains frequently came before the full moon, and almost invariably ceased as soon as the full moon appeared.

## CHEMICALLY PURE SILVER.

Mr. Gutzkow presented a sheet of chemically pure silver, three feet in diameter, about three ounces in weight, and as thin as fine paper. The color was beautifully white, and the texture like fine lace. This silver was obtained by mixing solutions of protosulphate of iron and sulphate of silver in a large dish, when the silver rose to the surface and there formed into a sheet. Successive sheets will rise with each stripping. This easy mode of obtaining chemically pure silver is of much practical value.

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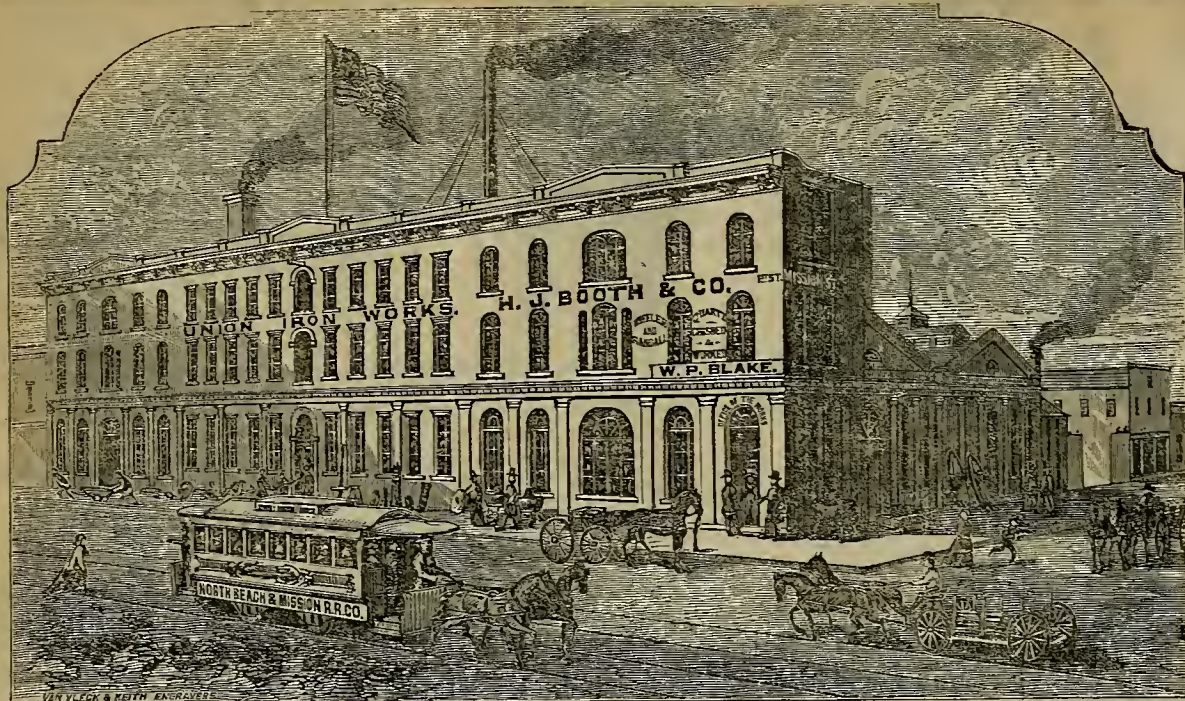
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**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

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DUNBAR'S IMPROVED  
Self-Adjusting Piston Packing.

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

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**NEW GRINDER AND AMALGAMATOR**  
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**AMALGAMATOR AND SEPARATOR,**  
Tyler's Improved Water Wheel.

Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10y-1f

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Steam Engines, Boilers,  
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Dunbar's Patent Self-Adjusting Steam Piston Packing, for new and old cylinders, manufactured to order.

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Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 13v13-y

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Special attention paid to Repairing. 13v13

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**Wine, Cider, Cotton and Tobacco Presses**  
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Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

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**LEWIS COFFEY & HEDDON,**

**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed in order, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

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For the Purchase and Shipping of Machinery

OF ALL KINDS.

ESPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14f

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Southeast corner Fremont and Tehama streets,  
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Practical Machinists and Iron Founders,  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS.  
Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else

**Wheeler & Randall's New Grinder and Amalgamator,**  
Which only needs examination to be appreciated.

**Tyler's Improved Water Wheel,**  
Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.

All wheels warranted to give the power as set forth, or the money will be refunded.

**Sale makers for this coast of the "Pendergast White Iron Stamp Shoes, and Dies."**

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited. 13v12

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**HIGH PRESSURE**  
**Steam Boilers**

MADE.  
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.

**Old Boilers Repaired**  
**D. CAMERON.**

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Professor Agassiz thus speaks of the gorgeous coloring assumed by American trees in autumn: "In attempting to determine the cause of these changes, it ought not to be forgotten that they occur locally, and also make their appearance on particular trees much earlier than upon others; so early, indeed, as to show clearly the fallacy of the prevalent idea that they are caused by frost. The temperature remains ten or fifteen degrees above the freezing point for a month and more after a good many of our trees have assumed their bright autumnal hues. The process is no doubt akin to that of ripening fruits, especially in such fleshy fruits as turn from green to yellow, purple or red, like apples, peaches, plums, cherries, and others. The change in color coincides with changes in the constitutive chemical elements of the plant.

COAL OIL, plentifully applied, will kill chicken lice—and the chickens too. It was tried the other day in Oakland.

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Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.

Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

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Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.  
9v145m

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
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ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 13v13-ly J. H. WEED.

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to. 13v11

**JOHN LOCHHEAD'S**  
**Steam Engine Works,**

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 23v12-3m

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**Mining and Prospecting**  
**Companies**

Elegantly printed, with care and dispatch, at the office of the  
**Mining and Scientific Press.**

Orders from the interior faithfully attended to.



"A NEW CURE FOR CONSUMPTION."—*Le Courrier Medical* contains a communication from Mons. Baleguer, describing a new oil, which he professes to have discovered, and which he declares to be endowed with a "marvellous power for traversing animal membranes." He says: "If a few drops are poured into the palm of the hand, and the palm rubbed with a finger, the oil is soon seen oozing through the back of the hand. The same experiment tried on the fore-arm produces the same result. When the oil is saturated with a foreign substance, it loses none of this remarkable power for penetration, and can therefore serve as a vehicle par excellence for the administration of drugs. The experiment has been tried with copaiba and with iodine, and with very satisfactory results. When the oil, saturated with iodine, was rubbed upon the palm of the hand, and the back of the hand wiped with a piece of muslin, the muslin was tinged violet." Mons. Baleguer believes that the efficacy of iodine, if administered in this oil, would be so immensely increased, that a rational hope might be entertained of its power to arrest tubercularization in the lungs. The popular prejudice among the ignorant rather takes to "oils." "Wizard oil" and "Electric oil" have had their day. Now comes another wonder, apparently of the same genus. The first point that suggests itself in this communication, is the fact that Mons. Baleguer conceals the name of this wonderful oil. This, in itself, savors of quackery; for among scientific men—at least those who devote themselves to the healing art—there are no secrets. But there are other points connected with the remedial virtues of iodine, as applied locally, which, as this is not a medical journal, we refrain from referring to.

INGENIOUS UTILIZATION OF FORCE.—Mons. Robert Houdin, the ex-conjuror, has, at his country house, a clock which is kept wound up by an ingenious arrangement of his own devising. He has made use of the force furnished by the constant opening and shutting of his door, to put in motion mechanism which winds up the weight. Several other curious contrivances about the house give proof of his remarkable ingenuity. He began life as a clockmaker.

To Owners of Copper Mines and Smelting Works.

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for Smelting Copper. Address "W," care of Mining and Scientific Press. 5v14f

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Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Pearls, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cartes de Visites only \$2 per dozen. Vignettes at \$4 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14m

**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Reference—B. W. McPherson, 523 Clay street, San Francisco. Humboldt City, Nevada. 6v14f

**International Hotel,**  
JACKSON STREET,  
BETWEEN MONTGOMERY AND KEARNY STS.,  
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THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents. 2v12  
F. E. WEGANT, Proprietor.

**GOVERNMENT HOUSE,**  
Corner of Sansome and Washington sts.,  
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THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes.  
The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half the price required to pay at hotels. 1v13m  
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The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

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A large assortment of these  
Superior Watches,  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
VERY FINE WATCHES FOR LADIES.  
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ALBERT E. CRANE.

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—OF—  
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Treatment of all Deformities of the Body, by DR. A. FOLLEAU's process. 624 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

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Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself. 8v13-1y1p  
He has no connection with any Agency.

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Look to Your Health in Time!

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE** and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the greatest Remedy of the age. Are you afflicted with Rheumatism?

Have you the Headache? Use Healy's Rheumatic Liniment!

Have you a Sore Throat? Use Healy's Rheumatic Liniment!

Have you the Toothache? Use Healy's Rheumatic Liniment!

Are you subject to Cramps? Use Healy's Rheumatic Liniment!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. R. L." is stamped on the cork, and the fac simile of FRANK HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and R. H. McConald & Co., San Francisco; and at retail by all respectable Drug stores and Grocers. Price, \$1. 2v14f-10p

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Corner of Montgomery and Bush Streets.

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THIS COMPANY ARE NOW PREPARED TO FURNISH Sulphuric, Nitric and Muriatic Acids of superior quality, in quantities to suit.

Orders will be received at the office only for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed. 8v14 3m

## REPORT

—OF THE—

## COMMITTEE

—ON—

## SEWING MACHINES!

California State Fair, 1866:

"To THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

FOR GENERAL FAMILY USE

—THE—

"FLORENCE"

—IS—

"THE BEST."

(Signed) J. N. ANDREWS,  
THOMAS C. MCNALE,  
L. ELKUS.

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco. 17v13

## MEUSSDORFFER,

Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE

On Saturday, February 9, 1867.

An Entirely New Style of

**Cloth Cashmere Hat**

"YACHT HENRIETTA,"

Which are the most dresy Hat ever introduced on the Pacific Coast. 8v14

Call and see them.

## Rheumatism!!

Still Another Witness!

LATHROP, Cal., Sept. 19, 1866.  
(White Oak Township, El Dorado Co.)  
This is to certify, that I have, for over thirty-six years, been afflicted with Chronic and Inflammatory Rheumatism, and the sufferings and tortures I endured in consequence cannot be told. I have, at an expense of thousands of dollars, employed many physicians, both in this country and in Europe (where I was born and resided many years), among which were several eminent professors of medicine, and I experienced no benefit from their treatment, more than at times a slight and temporary relief.  
About two years ago I was induced by some persons who had been cured by it to use Richard's Remedy for Rheumatism. It is enough to say that I was almost immediately relieved, and that I have not suffered with it since. I keep the medicine on hand, and, on the first approach of any returning symptoms, I take a few doses, which invariably put it to flight. I therefore cordially recommend it to be afflicted as an untailing remedy for Rheumatism.  
FREDK PABER.

RICHARD'S REMEDY is for sale by  
**H. BOWMAN,** Druggist, Sacramento,  
And by Druggists generally. 2v13

Engraved to Order.—Persons who desire to illustrate their individual establishments or business, should give us their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

**DEWEY & CO.,**  
Patent Agents, Publishers and Job Printers, 503 Clay st.



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FALKENAU &amp; HANKS,

Desire to call the attention of Druggists, Manufacturers, Metallurgists, Millmen, Assayers, Chemists and Students, to their

ANALYTICAL LABORATORY,

And Establishment for the manufacture of Pure Re-agents, Pharmaceutical Preparations,

And all CHEMICALS used in the Arts. They are prepared to make Chemical investigations,

Analyses and Assays,

Of every description, and to give advice upon all matters pertaining to Technical Chemistry.

Office, 629 Washington street; Laboratory, Corner of 3rd &amp; 4th Center and Folsom streets.

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Western Branch of ADELBERT &amp; RAYMOND, No. 90 Broadway, New York. 11v11

G. W. MAYNARD. J. H. TIEMANN.

MAYNARD &amp; TIEMANN,

Mining Engineers and Metallurgists,

240 Pearl street, New York,

—AND—

CENTRAL CITY, COLORADO. 19v12-1y

## EUROPEAN

## METALLURGICAL WORKS,

—AND—

Practical Mining School,

Bryant Street, Between Third and Fourth, SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test Ores sent to this establishment—either in large or small quantities—by such process as may be found best adapted to their chemical character, after a careful analysis has been made. Test lots of Ore adapted to the smelting process attended to. Sulphuret, pyrites, and the so-called "rebellious ores," are having especial attention paid to their successful treatment. Assaying in the humid and dry way. Also, refining by cupellation, done at moderate rates.

## PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications from gentlemen desirous of pursuing the study of practical metallurgy—have concluded to admit parties on reasonable terms. Having in their Mill all the necessary appliances for crushing, roasting, amalgamating, smelting, refining and assaying, as also a well extended Laboratory for the analysis of Ores and Minerals, a good opportunity is here offered to acquire a sound practical knowledge of the business.

S. P. KIMBALL, J. R. MURPHY. 10v10

## MOSHEIMER'S

## Metallurgic Works

And Practical School for Assaying and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLURGIC Works, and is prepared to reduce any kind of Ores, by Smelting, Amalgamating, or other processes, that the nature of the ore may require.

Practical instructions given in Assaying, all branches of Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating Ores, I can offer better concentrating machinery than any in use in California, and especially such as will save the fine or floating gold and sniphures.

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J. MOSHEIMER,

Engineer and Metallurgist. 25v13-3m

## Pacific Mail Steamship Co's

## THROUGH LINE TO NEW YORK,

Carrying the United States Mail.

LEAVE FOLSOM STREET WHARF, AT 11

o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.

On the 10th, 19th and 30th of each month that has 31 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 18th or 19th connect with French Transatlantic Co's steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton, and P. R. R. Co's steamer for Central America.

Departure of the 30th connects with English steamer for Panama, the port of the new mines.

The following Steamships will be dispatched on dates as given below:

March 9th—SACRAMENTO.....Capt. J. M. Cavarly, Connecting with HENRY CHANCEY, Capt. Oray.

March 19th—CONSTITUTION.....Capt. W. F. Lapidge, Connecting with QUINN, Capt. Maury.

March 30th—GOLDEN AGE.....Capt. Jas. T. Watkins, Connecting with the RISING STAR, Capt. Furber.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Inman Line, can be obtained at office P. M. S. S. Co., San Francisco.

For Merchandise and Freight apply to Messrs. WELLS, FARCO &amp; CO.

The splendid steamship COLORADO will be dispatched on WEDNESDAY, April 3, 1897, for Hongkong, via Kanagawa, carrying passengers, mails and freight.

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OLIVER ELDRIDGE, Agent.

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BARTLING & KIMBALL,  
BOOKBINDERS,  
Paper Rulers and Blank Book Manufacturers,  
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15v12-3m SAN FRANCISCO.

JOHN DANIEL,  
(SUCCESSOR TO O. GORD)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Mantels, Monuments, Tombs, Planners' Slabs  
Etc., On hand and Manufactured to order.  
33 Goods shipped to all parts of the State. Orders run  
promptly solicited. 5v8-3m

NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Burial Caskets and Cases,  
11v

THEODORE KALLENBERG,  
Maker of Models for Inventors.  
MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
LOSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair  
ing of machinery promptly attended to.  
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ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT,  
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HUCKS & LAMBERT,  
SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L.  
AXLE GREASE,  
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LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

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SAN FRANCISCO.

CARDS \$3  
Per 1,000  
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Lower Rates  
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19v13-3m

J. M. STOCKMAN,  
Manufacturer of  
PATTERNS AND MODELS,  
(Over W. T. Garratt's Brass Foundry.)  
S. E. Corner of Mission and Fremont sts.,  
6v14-1f SAN FRANCISCO.

WM. A. KOLLMYER,  
LOOKING-GLASS  
—AND—  
PICTURE FRAME MAKER,  
No. 41 Third street,  
Near corner of Jesse.  
19v12-3m

McNALLY & HAWKINS,  
Plumbers and Gas-Fitters,  
No. 645 Market street,  
Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fittings,  
Lead and Iron Pipes, Marble Slabs, etc.  
19v13-2q

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Practical and Analytical Chemistry and Metallurgy.

THOMAS PRICE,  
Professor of Chemistry,  
(Formerly of the Normal College, Swansea.)

WILL GIVE PRACTICAL INSTRUCTIONS IN QUALI-  
tative and Quantitative Analysis and Assaying. The  
course qualifies students for the application of Chemistry  
to METALLURGY, MANUFACTURING ARTS, and MINING  
PURPOSES.

PHARMACEUTICAL and TECHNICAL CHEMISTRY,  
such as is required by Medical and Pharmaceutical Stu-  
dents, will be taught to such students as may require it.

Course of General Chemistry.  
Evening Lectures will be delivered every Tuesday,  
at half past seven o'clock, P. M., in the Philosophical Hall of  
the College, without extra charge to the students in the  
institution.

On and after the 14th of February, the Laboratories will  
be open every day, except Sundays, from 8 A. M. to 5 P. M.  
For further particulars, address

REV. P. V. VEEDER,  
Principal of the City College.  
Or at 406 California Street.  
6v12eowtf

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Prices.—Single blanks, 10 cents; 75 cts per doz-  
en; \$4 per hundred—postage paid.

Pamphlet containing the Law and the Instruc-  
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Mining and Scientific Press, San Francisco.

Air Pump for Sale.—One of Tate's Double-Action  
Air Pumps, in prime order, can be had at a bargain, by  
applying soon at this office, or to JOHN ROACH, mathemat-  
ical instrument maker, 622 Montgomery street. 2v13-9p

## New Mining Advertisements.

Chilpancingo Mining Company—District of Ores,

Sonora, Mexico.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
thirtieth day of January, 1897, the several amounts set  
opposite the names of the respective shareholders as fol-  
lows:

Names.	No. Certificate.	No. Shares.	Amount.
Gautier, F.	10	25	\$150 10
Mosheimer, Jos.	58	25	125 00
Mosheimer, Jos.	57	25	130 10

And in accordance with law, and an order of the Board  
of Trustees, made on the thirtieth (30th) day of January, 1897,  
so many shares of each parcel of said stock as may be  
necessary, will be sold at public auction, by J. Middleton &  
Son, 404 Montgomery street, San Francisco, Cal., on Mon-  
day, the twenty-fifth day of March, 1897, at the hour of  
12 o'clock, M., of said day, to pay said delinquent assess-  
ment thereon, together with costs of advertising and  
expenses of sale.

JOHN F. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. m9

## Great Central Mining Company.—Location of

Works: Yuma County, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the first (1st) day  
of March, 1897, an assessment of one (\$1) dollar per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin,  
to the Secretary, at the office of the Company, No. 302 Mont-  
gomery street, San Francisco.

Any stock upon which said assessment shall remain un-  
paid on the eighth day of April, 1897, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Tuesday, the thirtieth day of April, 1897, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trust-  
ees.

O. D. SQUIRE, Secretary. m9

## Hanscom Copper Mining Company. Location:

Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the fourth day of  
March, 1897, an assessment of ten cents (10c) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin, to the  
Secretary, 609 Market street, San Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the fourth day of April, 1897, shall be deemed deli-  
quent, and will be duly advertised for sale at public auction,  
and unless payment shall be made before, will be sold  
on the twenty-second day of April, 1897, to pay the delin-  
quent assessment, together with costs of advertising and  
expenses of sale. By order of the Board of Trust-  
ees.

S. S. SWEET, Secretary. m9

## Office, No. 609 Market street, San Francisco, Cal.

## Keystone Mining Company. Location of Works

Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twentieth day of  
February, 1897, an assessment of ten dollars (\$10) per share  
was levied upon the capital stock of said Company, pay-  
able immediately in United States gold coin, to the Secre-  
tary, at his office, No. 440 California street, San Francisco,  
California.

Any stock upon which said assessment shall remain un-  
paid on Monday, the twenty-ninth day of April, 1897, shall  
be deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made be-  
fore, will be sold on Monday, the twentieth day of May,  
1897, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.

O. P. SUTTON, Secretary. m9

## Office, 440 California street, San Francisco.

San Marcel Silver Mining Company.—Loca-  
tion of Works: San Marcel, District of Hermosillo, State

of Sonora, Mexico.

Notice.—There are delinquent, upon the following de-  
scribed stock on account of assessment levied on the thirtieth  
day of January, 1897, the several amounts set opposite the  
names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brannan, Isaac.	15, 16, 17, 18, 19	900	\$450 00
Brannan, Isaac.	20, 21, 22, 23, 100-ea	500	250 00
Brannan, Isaac.	24	50	25 00
Brannan, Isaac.	25	25	12 50
Brannan, Isaac.	361	50	250 00
Brannan, Isaac.	362	40	200 00
Brannan, Isaac.	363	80	40 00
Bigley, Thomas.	364	10	5 00
Bigley, Thomas.	188	5	2 50
Bigley, Thomas.	212	8	4 00
Bigley, Thomas.	373	75	37 50
Bigley, Thomas.	399	20	10 00
Bigley, Catharine.	256	4	2 00
Harris, Ben. E.	223	27	13 50
Harris, Ben. E.	237	100	50 00
Harris, Ben. E.	281	10	5 00
Harris, Ben. E.	313	300	150 00
Harris, Ben. E.	317	17	8 50
Heins & Co, Herib.	204	10	5 00
White & Co, P. J.	383	900	450 00

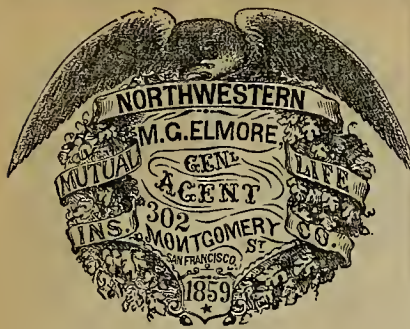
And in accordance with law, and an order of the Board of  
Trustees, made on the thirtieth day of January, 1897, so many  
shares of each parcel of said stock as may be necessary  
will be sold at public auction, by Maurice Doré & Co.,  
No. 327 Montgomery street, San Francisco, California,  
on the thirtieth day of March, 1897, at the hour of 12 o'clock,  
M., of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary. m9

## Office, 331 Montgomery street, San Francisco.

## Delays are Dangerous.—Inventors on the Pacific

Coast should bear in mind that by patenting their Patent  
they are incurring a necessary delay in securing their pa-  
tents almost immediately, thereby avoiding the three  
month's delay requisite in transacting business through  
Eastern agencies.



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OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS  
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Dividend Jan. 1st, 1897, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; C. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14qrfttlc2p

## Professional Cards.

## SHERMAN DAY,

Mining Engineer,

No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
2v9

## FREDERICK MANSELL.

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No. 422 California street, corner of Leidesdorff.  
Drawings of Monuments made for parties applying for pa-  
tents at Washington or London. mar23-1f

## GREGORY YALE,

Attorney and Counsellor at Law,

No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

## JAMES M. TAYLOR,

Attorney and Counsellor at Law,  
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and Massachusetts.

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## W. E. GOLDSMITH.

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SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

## GEORGE H. POWERS, M. D.,

Gives exclusive attention to

Diseases of the Eye.

Office, southwest corner of Bush and Mont-  
gomery streets, Room 7 and 8. Office hours, 10½ to 12, and  
2 to 4 o'clock.  
References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and  
L. B. Benchley. 4v13-1f

## Preserve Your Sight!

## C. MULLER, Optician,

205 Montgomery Street, - - Russ Block,  
Invariably suits the Eyes by a proper selection of his  
Glasses. Price of Perfect Glasses, \$2.50 and upward.  
Sent pre-paid to any post office on the Coast. Applicants by  
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Address, C. MULLER, Optician,  
2v14-1f 205 Montgomery street, San Francisco.

## DR. H. AUSTIN,

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Electro-Magnetic Physician,

CURES ALL CURABLE DISEASES, BY THE CONCENT-  
ration of the vital forces, Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
made to walk, and the sick healed. Come and see the af-  
fected at the rooms. They will speak for themselves. The  
poor treated free from 10 to 14 A. M., and 4 to 5 P. M. Operating  
rooms, 410 Kearny street, between Pine and California.  
2v13-2m



## Mining Notices--Continued.

## To Capitalists.

**GOLD QUARTZ MINE, SITUATED IN CALAVERAS COUNTY,** with steam mill fitted up with Amalgamating Pan, etc. FOR SALE. The mine has three main veins, and more than \$80,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 333 Clay street, San Francisco.

## Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of February, 1897, an assessment of five dollars per share was levied upon the capital stock of said Company, payable March fourth, 1897, in United States gold and silver coin, to the Secretary, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of April, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-third day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. feb12

## Caution!

**Consolidated Silver Mining Company.** The following Certificates of Shares in the Capital Stock of the above named Company, were sold to pay delinquent assessment and expenses of advertisement and sale, on the eleventh day of February, 1897, at the auction rooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, at twelve o'clock, noon:

In name of	No. Certificate.	No. Shares.
J. J. Hogan	666	25
James Landley	662	25
James Landley	663	133
A. H. Mordock	665	25
I. D. Thompson	665	25

Parties are hereby cautioned against purchasing the above described Certificates of Stock.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, Cal. feb14-tt

## Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1897, an assessment of twenty dollars per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, 402 Front street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of May, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. feb16

## Cherokee Flat Blue Gravel Mining Company, Cherokee Flat, near Oroville, Butte County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of January, 1897, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
M. S. Coburn	not issued	2	\$10.00
J. H. Wilson	27	3	40.00
M. R. Clark	27	3	15.00
H. West	23	3	15.00
Henry Poppe	15	7	25.00
Hedley & Knicht	not issued	10	60.00
Ernest Poppe	20	5	25.00
W. H. Rhodes	11	16	80.00
S. Randall	10	3	15.00
R. E. Strauss	22	5	25.00
P. C. Heringer	not issued	5	25.00
M. S. A. Willis	not issued	1	5.00
Edward Hunt	8	10	50.00
E. W. Smith	5	7	35.00
M. S. Bryant	not issued	1	5.00
Paula Loomis	not issued	1	5.00
L. Schmidt	not issued	2	10.00
J. Behrens	not issued	6	30.00
P. P. Flint	not issued	6	30.00
S. J. Sanford	not issued	4	20.00
W. Buck	not issued	13	65.00
G. A. Jones	not issued	2	10.00
G. S. Stallman	not issued	7	35.00
M. S. A. Willis	not issued	3	15.00
E. P. Flint	not issued	5	25.00
T. B. Howard	not issued	3	15.00
J. De La Montagne	not issued	3	15.00
J. T. Swift	not issued	10	50.00
H. Nichols	not issued	4	20.00
G. W. Bell	not issued	3	15.00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of January, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at their salesrooms, No. 327 Montgomery street, San Francisco, California, on the eighth day of March, 1897, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. D. SENALLIAC, Secretary.  
Office, southeast corner of Jackson and Montgomery streets, (op stairs) San Francisco, Cal. feb12

## Chalk Mountain Blue Gravel Company, Location of Works: Nevada County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of January, 1897, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. C. McComb	15	150	\$150.00
Isaac Kwin	bal 24	15	15.00
Marlin White	bal 5	2.0	20.00
S. H. Mapple	31	75	75.00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of January, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Messrs. Olney & Co., at No. 418 Montgomery street, San Francisco, California, on Saturday, the ninth day of March, 1897, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINOT, Secretary.  
Office, No. 5 Government House, corner Washington and Sansone streets, San Francisco, California. feb23

## STOCK CERTIFICATES, STOCK TRANSFER JOURNALS, STOCK LEDGERS, ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press.

## Diamond Copper Mining Company, Location: Rockland District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of February, 1897, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, Room No. 31 Montgomery Block, San Francisco, or to ROBT. B. RANDALL, the Company's Superintendent, at Crescent City, Del Norte County, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the ninth day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, Room No. 33 Montgomery Block, corner of Montgomery and Washington streets, San Francisco, Cal. feb9

## Emilia Mining Company, State of Guerrero, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1897, an assessment of seventy-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, Room No. 1 Crim House, No. 523 Kearny street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.  
Office, Room No. 1 Crim House, No. 523 Kearny street, San Francisco, Cal. feb23

N. B.—The above assessment is levied in place of the assessment levied October 26th, 1895, which was revoked at a meeting of the Board of Trustees, held February 20th, 1897. All stockholders who have paid on the said assessment levied October 26th, 1895, will be credited the amount so paid on the assessment of February 20th, 1897. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.

## Even Consolidated Copper Mining Company, Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fourteenth day of January, 1897, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	Certificate.	Number of Shares.	Amount.
Wm. M. Rider	61	12	\$4.00
P. B. Cornwall	143	10	\$2.50
P. B. Cornwall	144	10	\$2.50
P. B. Cornwall	145	10	\$2.50
P. B. Cornwall	146	10	\$2.50
P. B. Cornwall	147	10	\$2.00
P. B. Cornwall	148	12	\$3.00
J. L. Moody	115	12	\$3.00
R. C. Rogers	136	112	\$28.00
H. D. Rogers	138	112	\$28.00
H. D. Rogers	139	112	\$28.00
H. D. Rogers	140	86	\$21.50
D. R. Baker	151	20	\$5.00
W. H. Beckford	156	20	\$5.00
W. H. Beckford	204	20	\$5.00
A. Hower	194	6	\$1.25
Jas. M. Olmstead	193	3	.75
Chas. Yeomans	184	35	\$9.00
Chas. Yeomans	185	20	\$5.00
Chas. Yeomans	201	50	\$12.50
Chas. Yeomans	202	40	\$10.00
A. E. O'Neill	109	12	\$3.00
A. E. O'Neill	110	50	\$12.50
A. E. O'Neill	111	50	\$12.50
E. B. Holmes	123	25	\$6.25
O. B. McAneny	121	62	\$15.50
O. B. McAneny	172	100	\$25.00
Wm. Hamill	10	10	\$2.50
I. Munson	71	20	\$5.00
J. J. Ayers	219	112	\$28.00
Charles E. Abbot	223	30	\$7.50
F. Collier	112	112	\$28.00
E. S. Morison	132	25	\$6.25
J. Morison	202	50	\$12.50
J. Morison	203	112	\$28.00
J. Morison	204	25	\$6.25
R. J. Vandewater	67	12	\$3.00
R. J. Vandewater	68	50	\$12.50
R. J. Vandewater	69	50	\$12.50
B. W. Wilcox	26	25	\$6.25
H. B. Osborn	230	50	\$12.50

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of January, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., at No. 418 Montgomery street, San Francisco, Cal. on the thirteenth day of March, 1897, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. S. CLYDE, Secretary.  
Office of Company, No. 532 Merchant street, Room No. 3, San Francisco, California. feb23

## George Washington Gold and Silver Mining Company, Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 17.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of February, 1897, an assessment of three dollars and fifty cents (\$3.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the ninth (9th) day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of March, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. feb9

## Hope Gravel Mining Company, Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of February, 1897, an assessment (No. 13) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in gold coin of the United States, to the Secretary, at the office of the Company, No. 529 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on Wednesday, the third day of April, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, corner of Ledicesford street, San Francisco, Cal. feb25

## Kern River Gold and Silver Mining Company, Cove District, Kern County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the third day of January, 1897, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A. Staples	57	30	\$30.00
P. H. Staples	52	30	30.00

And in accordance with law, and an order of the Board of Trustees, made on the third day of January, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the Company's office, No. 302 Montgomery street, San Francisco, Cal., on the twelfth day of March, 1897, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.  
Office, No. 302 Montgomery street, San Francisco. feb12

## Mount Tembo Silver Mining Company, Location of Works: Cortez District, Lander County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of February, 1897, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-first (21st) day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eleventh day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. feb16

## Nuestra Señora de Guadalupe Silver Mining Company, Tayoltita District, Durango, Mexico.

The Annual general Meeting of said Company, for the election of Trustees for the ensuing year, will be held on MONDAY, the fourth day of March, 1897, at 8 o'clock P. M., at the office, No. 210 Post street, San Francisco. Proxies must be in writing, and ten cents stamp affixed.

R. J. PFEIFFER, Secretary.

## North San Francisco Homestead and Railroad Association, at the City and County of San Francisco, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the eleventh day of January, 1897, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Hugh Whittell	255	12	\$150.00
Hugh Whittell	256	60	625.00
Michael O'Neill	363	2	25.00
Nathl Page	223	10	125.00
Nathl Page	224	4	50.00
Nathl Page	225	10	125.00
Nathl Page	226	10	125.00
Nathl Page	227	5	62.50
Nathl Page	228	5	62.50
Nathl Page	229	5	62.50
Nathl Page	230	5	62.50
J. B. Palmer	250	100	1250.00
P. F. Strother	225	5	62.50
Wm. L. Urton	227	6	75.00
Wm. L. Urton	228	5	62.50
Wm. L. Urton	229	10	125.00
Wm. L. Urton	230	10	125.00
Wm. L. Urton	231	20	250.00
Wm. L. Urton	232	5	62.50
Livy K. Baker	213	8	100.00
I. Rowell	208	10	125.00
R. Rowell	209	10	125.00
Chas. De Ro.	205	23	287.50
Wm. A. Piper	201	47	587.50
Ch. H. Simpkins	202	234	2925.00
Ch. H. Simpkins	203	100	1250.00
Geo. H. Ensign	155	63	787.50
Geo. H. Ensign	156	304	3800.00
L. F. Loveland	244	11	137.50
L. F. Loveland	245	172	2150.00
L. F. Loveland	246	399	4987.50
L. F. Loveland	247	350	4375.00
L. F. Loveland	248	288	3600.00
L. F. Loveland	249	114	1425.00
L. F. Loveland	250	200	2500.00
L. F. Loveland	251	125	1562.50
R. Bayreque	146	30	375.00
Alonso Young	133	10	125.00
W. P. Hale	131	60	750.00
W. P. Hale	132	5	62.50
Geo. Barstow	118	8	100.00
Geo. Barstow	209	69	862.50
Geo. Barstow	210	1	12.50
Geo. Barstow	211	7	87.50
Geo. Barstow	212	10	125.00
H. S. Wheeler	162	2	25.00
Geo. Hudson	167	75	937.50
John O. Klumpke	143	30	375.00
John O. Klumpke	144	20	250.00
Nicholas Langford	105	140	1750.00
Prosper Huernie	98	2	25.00
Prosper Huernie	99	2	25.00
Prosper Huernie	100	2	25.00
W. W. Stewart	108	4	50.00
James T. Boyd	83	42	525.00
Resteome Perry	92	5	62.50
Resteome Perry	223	10	125.00
Alfred Barstow	223	64	800.00
Alfred Barstow	264	13	162.50
R. P. Morrison	178	98	1225.00
R. P. Morrison	272	12	150.00
John A. Heller	6	2	25.00
John A. Heller	226	3	37.50
E. L. Smith	20	3	37.50
Guleth Fay	108	8	100.00
B. F. Moulton	269	2	25.00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of January, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Friday, the fifteenth day of March, 1897, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. W. KINNEY, Secretary.  
Office, No. 418 California street, Room No. 5, third floor, San Francisco. feb12

## Salamanca Gold and Silver Mining Company, Location of Works: Leon's Ranch District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of February, 1897, an assessment (No. 7) of fifty cents per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, E. J. Pfeiffer, at the office, No. 210 Post street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of March, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the tenth day of April, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco, Cal. feb16

## San Marcel Silver Mining Company, Location of Works: San Marcel District of Hermosillo, State of Sonora, Mexico.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, will be held on TUESDAY, the eighteenth day of March, 1897, at 7 1/2 o'clock P. M., of that day, at the office of the Company, No. 331 Montgomery street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. feb12

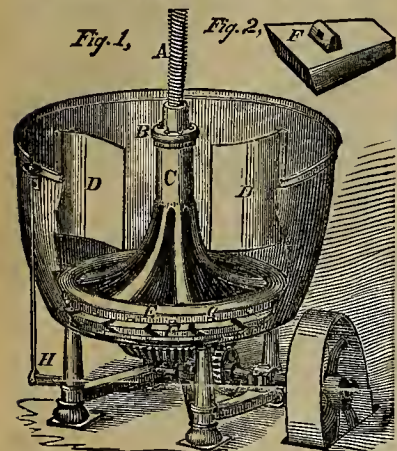
## Siskiyou Mining Company, Location of Works: Middle Fork of Humboldt Creek, in the County of Siskiyou, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the muller to better advantage than any other Pan in use, while the steam owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the muller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the disc.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v11r

## HUNTER'S IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ore on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety percent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

32—One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor, 22v13-3m San Francisco.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular low between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the **PACIFIC FOUNDRY,** San Francisco, 1v1

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

**PICKERING'S GOVERNORS**

For Steam Engines.

**Giffard's Injectors,**

For Feeding Boilers.

**STODDART'S IRON WORKS,**

Beale Street, San Francisco, 23v12 3m

## TIME & LABOR SAVED —BY USING— STANDARD SOAP COMPANY'S WASHING POWDER.

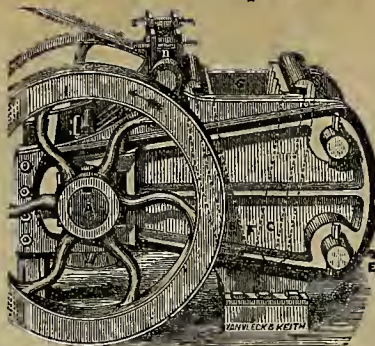
THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1 lb. each, and in wooden boxes of 10-lb. bulk. Ask your grocer for a package, and test its virtue. Manufactured at **207 Commercial street,** San Francisco. 15v12q

## Brown's Filtering Heater!

FOR PREVENTING INCrustation IN STEAM BOILERS. purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler repairs alone.

One is in operation at the San Francisco Foundry, Fremont street, where rights can be procured, or all needed information, on application, in person or by letter, to 6v14-1y **AUSTIN A. WELLS, Agent.**

## Brodie's Patented Improvements



## FOR THE TREATMENT OF Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.** The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms: No. 1—Or 8 inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600 No. 2—Or 15 inch Crusher, capable of similarly putting through five to six tons per hour.....\$850 No. 3—Or 18 inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.** The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, O, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county:

**RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1866.** JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty will be charged for using the same will be raised to the sum of \$100 per Barrel.

A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press, of Sept. 22d, 1866.

**BRODIE & RADCLIFFE,** Express Building, 402 Montgomery street, San Francisco.

12v13fr

## BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

**PREMIUM SILVER MEDAL**

—BY THE—

**The Mechanics' Institute.**

Patented December, 1866.

**THESE FURNACES ARE NOW MANUFACTURED AT** an improved mode of construction, which **GREATLY SIMPLIFIES THEIR OPERATION,** and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

19v12 T. KALLENBERG, 416 Market street, San Francisco.

## Notice to Miners,

**Well-Borers and Water Companies.**

**M. PRAG** IS NOW PREPARED TO MANUFACTURE M. Hydraulic and Artesian Well Pipes in the best workmanlike manner, at the lowest market price. I have made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture the M. Stoves, of the latest improved pattern, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG, 8v13-1y Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER! PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

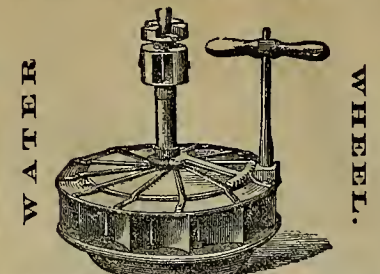
**WM. P. BLAKE,**

Corner First and Mission streets, or Box 2,077 3v13r SAN FRANCISCO.

## Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

## LEFFEL'S American Double Turbine



**THESE WHEELS, UNEQUALED AND UNRIVALED** IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc. CALIFORNIA REPRESENTATIVES: L. Stetson, Polson; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. V. McMillan, Lexington Santa Clara County. Send for Circular, to **KNAPP & GRANT,** Agents for California, 26v13-1y 310 Washington street, San Francisco

## To Quartz Miners and Others.

### NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

### HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m **JAMES HITCHENS.**

## IMPORTANT —TO— WORKERS OF GOLD & SILVER ORES.

THOSE INTERESTED WILL FIND IT TO THEIR ADVANTAGE to call on **MR. WILLIAM SLOSSON,** at Prof. V. P. Blake's Office, and obtain a Business Circular, just published by the **WURTZ AMALGAMATION COMPANY** of New York, who have secured, under the Patents of Prof. Henry Wurtz, the sole and exclusive right to the use of sodium in amalgamation. Mr. Slosson is prepared to supply the licenses of the Company, with the material for applying this new and wonderful discovery, by which, in the words of President Barnard, of Columbia College, "two grains of gold may be gathered where but one was before." 19v13-2m

## STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers. Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by 22v13 **G. W. STRONG, Assayer.**

## The Mercantile Gazette

—AND—

## PRICES CURRENT.

**E. D. WATERS & CO., Prop'rs.**

E. D. WATERS, Secy. T. F. CHRONISE. J. H. CARMANY,

Office, Northeast corner Clay and Battery sts.,

SAN FRANCISCO.

The Mercantile Gazette and Prices Current" is the only

### Commercial Paper

### ON THE PACIFIC COAST.

PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

## THE LETTER SHEET PRICES CURRENT

For enclosure in letters, is also published every

13v13fr STEAMER DAY.

## DEWEY & CO. PATENT AGENTS, ENGRAVERS AND PUBLISHERS Mining & Scientific Press. CIRCULARS FREE. SAN FRANCISCO.

That excellent paper has donned a new dress of California manufacture.—Reese River Reveller.

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Mining and Scientific Press  
Published Saturdays, containing 16 pages, at \$5 per year.

The Mining and Scientific Press is all that its publishers claim for it, being a compendium of mining news on the Pacific Coast, and a general disseminator of all matters of interest to the mechanical and agricultural portions of the State.—Dutch Flat Enquirer.

**ARTIFICIAL SILK.**—A Paris correspondent of the New York Evening Post has the following extract from a French journal:

One M. Tracol, arguing that silk was produced entirely out of the fibers of the mulberry leaf, and that the silk-worm was only a sort of spinning machine that operated on these fibers, set himself to work to discover some method for dispensing altogether with the little animal's intervention. After an immense number of attempts and experiments, more or less at random, he announces that he has at last discovered the means of spinning silk without the aid of the silk-worm—that is to say, of reducing the annual shoots of the mulberry to a mass of filaments, which (according to respectable witnesses) are indistinguishable from those of the cocoon. If this account be really reliable, an immense advantage to the silk trade is about to be gained by the substitution of the stability and certainty of machinery for the present fluctuations in the life and activity of the animal spinner. The occupation of the silkworm threatens to be gone.

We don't see it. Monsieur Tracol may, in his laboratory, succeed in making some kind of fiber from the leaves, but it must, of necessity, be entirely different from that produced in Nature's laboratory. The vital element in the process will be wanting. One might as well plan the artificial manufacture of horse-hair from grass, which is the natural food of the horse, as the making of silk from mulberry leaves, the natural food of the silk-worm. That mysterious force, which, through the medium of an unsightly bush, elaborates the various salts which the soil affords, into the exquisitely tinted rose-petal, is infinite; Mons. Tracol's chemistry is finite. Perhaps the gentleman will next propose to make us a tulip from the materials to be found in a manure-heap?

**THE TRUE SOURCE OF ALCOHOL.**—All alcohol, whatever apparent form it assumes, has one origin. It comes from the destruction of sugar, and has no other source in nature. It is not a production of general growth, like those substances which are created to form the food of man. No chemist has ever yet found it among the compounds built up by plants. The solar beams that "reach like the finger of God across the abyss of space," and in the laboratory of vegetation, take to pieces poisonous gases, and put together their atoms in new groups which are capable of nourishing the animal body; but the celestial force never arranged together the atoms which form alcohol. On the contrary, it is a product of dissolution of the wreck and disorganization of the principles of human food. It has the same origin as those malignant and fatal exhalations which constitute the genius of pestilence—the death and putrefaction of inorganic matter. Indeed, the same act which gives birth to alcohol, also brings into the world a twin compound, which is one of the promptest and subtlest of all noxious gases—carbonic acid gas.

**A NATIONAL CABINET OF MINERALS.**—The Washington correspondent of the Alta says: "Commissioner Wilson has it in contemplation to establish in the Patent Office a museum of minerals, from the various States and Territories; specimens of which will be solicited from miners, mining associations, and others interested in the mineralogy of this country. The project has not yet assumed definite shape, but will doubtless be carried into effect before long. The proposition is to assign a special alcove or cabinet for each State and Territory, in which will be placed specimens of all the minerals known to exist therein, to be so arranged as to afford visitors and scientific men an opportunity for examination. The Commissioner has already collected a large number of specimens, chiefly from the Western States and Territories."

**FEMALE LABOR IN MACHINE SHOPS.**—Something of an innovation in the machine line has recently been introduced into the Morse Twist Drill and Machine Company's Works, New Bedford, Mass., in the shape of twenty-four female machinists—young women—who do filing of a light nature, tend light machines, grind drills, and do other miscellaneous work. They are occupied in work which had been previously executed by boys—are found to be much more manageable, attentive and useful to their employers. They work in an apartment by themselves, are very happy at their work, earn good wages, and are exposed to no improper influences.



**CALIFORNIA THE BEST AFTER ALL.**—A correspondent of the Nevada Gazette, at Boise City, Idaho, writes as follows: "The conclusion of the most experienced prospectors is, that none of the Territories have yet afforded placer or gold diggings in extent or richness at all comparable with the placers of California, and the expression is almost unanimous, that to-day California is the best mining country."

**BRITANNIA METAL** is made by fusing together four parts each of brass and tin, and adding four parts each of antimony and bismuth. This composition can be mixed *ad libitum* with melted tin.

**BENNETT, JUNIOR**, is the latest New York lion. It is said that there is really serious talk of him as the next Mayor! Well, "some men have greatness thrust upon them."

**PRINCE ARTHUR**, a sprig of royalty, aged seventeen, is to have charge of Canada, which is to be a Kingdom.

The Springfield Armory turns out two hundred of the new breech-loaders every day.

### Perry Davis' Vegetable Pain Killer.

The Great Family Medicine of the Age! Pain Killer, taken internally, should be administered with milk and water, and sweetened with sugar if desired, or made into a syrup with molasses. For a Cough, a few drops on sugar eaten will be more effective than anything else. For Sore Throat, gargle the throat with a mixture of Pain Killer and water, and relief is immediate and the cure positive. It should not be forgotten that the Pain Killer is equally as good to take internally, as to use externally. Each bottle is wrapped with full directions for its use. Please read the printed directions.

Sold by all Medicine Dealers everywhere. 9v14-1m

### Allen's Lung Balm

Is warranted to break up the most troublesome Cough in an incredibly short time. There is no remedy that can show more evidence of its merits, than this Balm, for curing Consumption, Coughs, Colic, Asthma, Croup, etc. To Physicians—Physicians having consumptive patients, and having failed to cure them by their own prescriptions, if they desire to try Allen's Lung Balm, by writing to the proprietors they will send a formula which will enable them to judge whether the ingredients are of a superior compound or not. The medicinal properties are extracted by a chemical process. The apparatus by which some of them are extracted cost many thousands of dollars. Dr. H. P. McKEITH, Dentist, Office No. 132 West Sixth Street, Cincinnati, states as follows: "Gentle—About one year ago I took a cold which settled on my lungs. A violent cough was the consequence, which increased with severity. I expectorated large quantities of phlegm and matter. During the last winter I became so much reduced that I was confined to my bed. The disease was attended with cold chills and night sweats. A diarrhoea set in. My friends thought I was in the last stages of consumption, and could not possibly get well. I was recommended to try ALLEN'S LUNG BALM. The formula was shown to me, which induced me to give it a trial, and I will only add that my cough is entirely cured, and I am now able to attend to my business as usual." P. McKEITH

Sold by all Medicine dealers everywhere. 9v14-1m

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CHRONIC DISEASES. Consultation free.  
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A Largest Size (half medium) RUGGLES' BEST JOB Press, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to  
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Mining and Scientific Press Office.

### SAN FRANCISCO

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Merchants' Insurance Building,

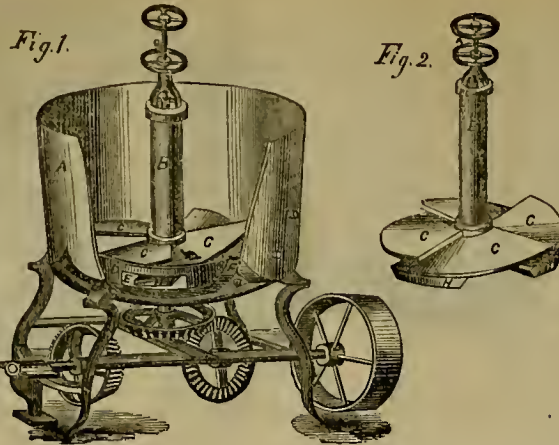
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THIS INSTITUTION IS DESIGNED TO PREPARE boys and men for business pursuits, and to impart a thorough commercial education. It is conducted upon actual business principles. The student, upon entering College, is furnished with a capital in cash and merchandise, and a place of business, opens an account with the bank, insures his goods in the insurance office of the College, and enters upon the arena of business. He commences speculation, carrying out all the details of trade, buying and selling goods, depositing in and checking from the bank, making and negotiating notes, drafts, bills of exchange, etc., recording the transactions and keeping the books in a regular and scientific manner. From this he advances in other capacities, until he finally takes his position in the Union College Bank, a regularly established institution, complete in all its appointments, and having a circulation of one million in College currency. This course saves from four to six weeks' time in copying useless manuscripts. There is no vacation, and students can enter upon any business during the year. The public are invited to call and examine the various departments. Session day and evening. Address  
JAMES VINSONHALER, Principal.

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### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

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BOTH OF MATERIAL AND FINISH.

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LINSEED, CASTOR AND CHINA NUT.

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SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

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WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

ASSAY AND BULLION BALANCES,

And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

### WOODWARD'S GARDENS!

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Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirtieth and Fourteenth streets.

Open Every Day!

ADMISSION:

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NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market Street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

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CAN BE PREVENTED, BY USING

Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

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N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

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THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS of the Nervous System and Reproductive Organs, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

### Portable Steam Engines!

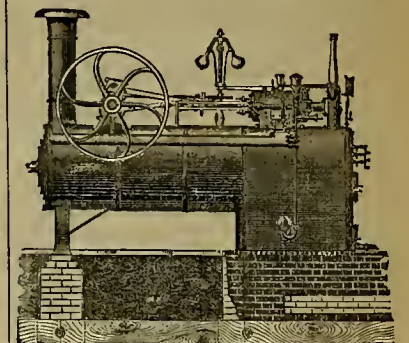
"Hoadley's" and "Hittinger's" Make,



HOADLEY'S.

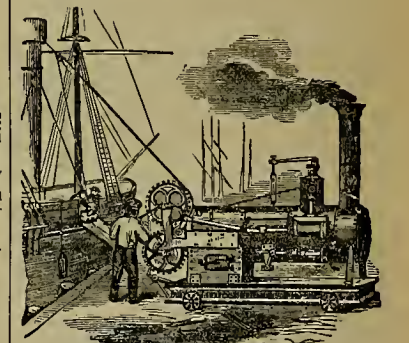
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

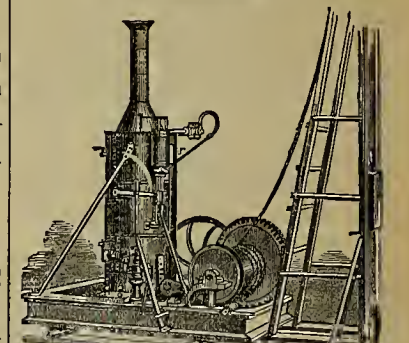
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.  
These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.  
Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.  
All sizes on hand from 3 to 30 horse power, with an without carriages.  
Also, Portable Saw and Orlst Mill.  
For sale by  
TREADWELL & CO.,  
9v14-6ml9 Corner of Front Market and streets.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**A BREAD MIXER.**—J. M. Stanyan, of Milford, N. H., has invented a new bread mixer, which has been referred to Solon Robinson, of the American Institute, for examination. He reports that it has been used several weeks in his family, with entire satisfaction. The machine is a tin pan, having a wooden lid made air-tight by a rubber band. The materials for the bread being put into the pan, it is placed upon a pin on a standard, and made to revolve for a few minutes, which does the mixing.

**COUNTING MACHINE.**—The Amador Ledger has received what that paper calls "a very ingenious and accurate machine for counting sheets of paper as fast as they are printed." It is described as having two dials on its face, one marking one dozen sheets, and the other sixty dozen. The little contrivance is particularly adapted to job printing presses, and will be found very convenient in all cases. It can be easily attached to any kind of a press.

## PATENTS RECENTLY ISSUED.

**HAY KNIFE.**—Philo O. Soper, San Francisco, Cal.: I claim, 1st, The point, A, in combination with the blade, B, to act as a self-feeder.

**PAPER-RULING MACHINE.**—George A. Ball, San Francisco, Cal.: I claim, 1st, The division of the cylinder into any number of sections with nippers working between each section and the introducing of movable blocks between each nipper to preserve the circular form of the cylinder, in combination with the nippers, substantially as described.

2d, Covering the cylinder with india-rubber cloth, and placing upon the edge of each section, where the nippers strike, a strip of gutta-percha, as described and for the purposes set forth.

3d, Gauge, rolls, and lock-nuts, affixed to the feed-board.

**APPARATUS FOR AMALGAMATING ORES.**—Abner Bassett, Virginia City, Nev.: I claim, 1st, a barrel, or its equivalent, having a hollow shaft passing through it, by which heat is introduced by exhaust steam or otherwise, substantially as described, and for the purpose set forth.

2d, A hot-air, shell or bath, for the purpose of applying heat by exhaust steam, or otherwise, to the outside of the vessel containing the pulp, whereby obdurate ores are made to amalgamate more freely, substantially as described, and for the purpose specified.

3d, The application of steam or heat to the ore or pulp, both through and around it, without coming in direct contact with it; the said ore or pulp being confined in some suitable vessel, said vessel being inclosed in a shell or bath, for the purpose herein set forth.

**Our Free List** in San Francisco, will hereafter receive the Press through the post office, postage free.

**OLNEY & Co.,** Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. uo10

**NATURAL CURIOSITIES FOR CHRISTMAS.**—At No. 522 Pine street, E. F. LORQUIN, the Naturalist, has on hand a beautiful assortment of glass globes full of Stuffed Birds, Shell, and Wax Flowers, besides Feathers, Birds and Butterflies, for ladies' hats, Shells, Sea-weeds, etc. 24v13 gr

**PACIFIC HYGIENIC HOME WATER CURE,** at Fountain Farm, near Oakland. Chartered and conducted according to the teachings of the Hydropathic College of New York, by the Pacific Hygienic Home Association (Incorporated), B. J. SMITH, M. D., Consulting Physician; R. S. MACBETH, M. D., Attending Physician; W. G. W. HARTFORD, Manager; H. ANDREWS, Business Agent. Office, Baths and Lecture Hall, No. 827 Sacramento street, between Montgomery and Kearny streets. Free Lectures every Tuesday and Friday evenings. 18v13 tf

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Never fail to stand any climate.

The only Perfect Pianos

They lead in all valuable improvements—all others follow.

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421 Montgomery street, bet. California and Sacramento.  
17v14v14r16p

## Quartz Mill Construction and Superintendence.

**THE UNDERSIGNED IS AT PRESENT OPEN FOR AN** engagement as a working Superintendent in the construction or operation of a Quartz Mill. Has had five years steady and successful experience in working ores in Washoe, and is practiced in saving sulphurets and the treatment of rebellious ores. Is prepared to furnish references for all the necessary qualifications of an intelligent, faithful and reliable quartz operator. Address **F. M. SHAW,** San Francisco, care Mining and Scientific Press. 17v14 3m

## HENDY'S LATEST IMPROVED CONCENTRATORS,

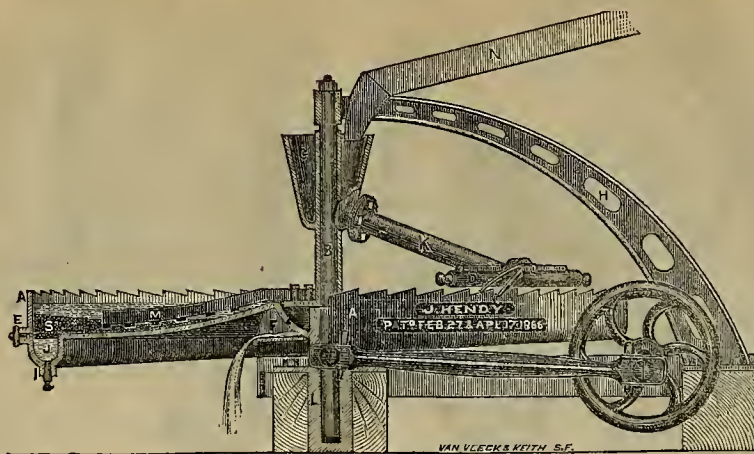


FIG. 1.

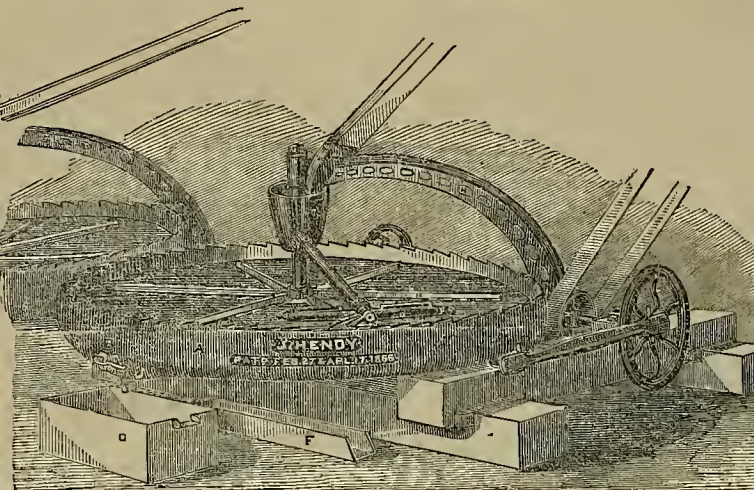


FIG. 2.

## FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

The revolving stirrers and rotary distributor can be easily attached to Hendy's old Concentrators, and at a small expense.

These machines have been thoroughly tested, and pronounced a perfect success. The proprietor of this Concentrator feels satisfied that it has NO EQUAL in use. It is designed for saving finely divided Quicksilver, Amalgam and Gold from the sands, and for concentrating and saving the Sulphurets, and is to be placed behind any and all other machines in use. Any person of ordinary experience with Quartz Mills can readily fit them up and run them.

The principle upon which HENDY'S PATENT CONCENTRATOR is constructed, is the only true and mechanical one for the purpose of concentration.

## CENTRIFUGAL FORCE AND GRAVITATION,

Combined as they are in this machine, CANNOT FAIL TO ACCOMPLISH the object sought. Many certificates from proprietors of mills, who have this Concentrator in use, can be had, if required, giving the most flattering accounts of its efficiency.

A most substantial evidence of its worth is the fact that the proprietor is receiving repeated orders from those who are using them, and who have tested their merits.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit. **THEY ARE WARRANTED TO WORK SATISFACTORILY.**

## Directions for Operating Hendy's Concentrator.

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:

FIRST—Set the Pan, A, level, by its inner rim.

SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 1, marked S.]

THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.

FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:

EMPIRE MILL.....	Grass Valley, Nevada County.
GOLD HILL MILL.....	Grass Valley, Nevada County.
CONEY & BIGELOW MILL.....	Jackson, Amador County.
SPRING HILL MILL.....	Amador, Amador County.
GOLDEN GATE MILL.....	Volcano, Amador County.
OPHIR MILL.....	Placer County.
C. H. SCHNABER'S MILL.....	Doty Flat, Placer County.
GOLDEN RULE MILL.....	Stewart Flat, Placer County.
BENTON MILL.....	Bear Valley, Mariposa County.
LOUISIANA MILL.....	Coulterville, Mariposa County.
PEOPLE'S MILL.....	Alleghany, Sierra County.
TYRON & CO'S MILL.....	Prescott, Arizona.
WOOLSEY & CO'S MILL.....	Prescott, Arizona.
NOYES & CO'S MILL.....	Prescott, Arizona.
GUADALUPE & SACRAMENTO G. & S. M. CO.....	Sinaloa, Mexico.
TRIUNFO G. & S. M. CO.....	Lower California.

And in use in many other parts of this coast.

For description, etc., see previous numbers of this journal.

## CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

Feb. 1st, 1867.

**JOSHUA HENDY, Patentee,**

Union or Fulton Foundry, San Francisco.

W. T. GARRATT,  
City  
BRASS AND BELL FOUNDER:

Cor. Mission and Fremont sts.,

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Manufacturer of Brass, Zinc, and Anti Friction or

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CHURCH AND STEAMBOAT

BELLS,

TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZELS

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 617

## Foundry for Sale.

A One-half Interest in the

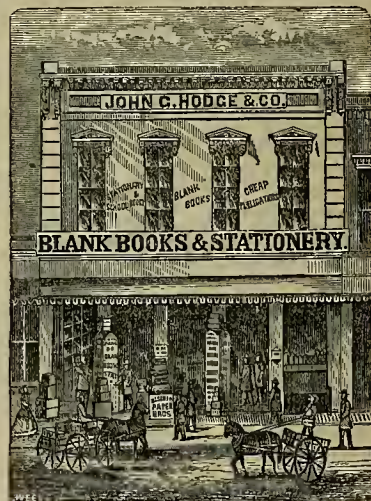
**UNION IRON WORKS,**  
SACRAMENTO,

Owned by William B. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 55 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address  
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## RUGGLES' PRINTING PRESS.

For Sale or Exchange.

The Proprietors of the Mining and Scientific Press have on hand a Half Medium Ruggles' Engine Job Press, in condition good as new, which will be sold cheap, or exchanged for a good Hand Press of medium or large size.

**DEWEY & CO., Job Printers,**  
Office, 505 Clay street.

## California Steam Navigation

**COMPANY.**

Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPELIS.....CAPT. A. FOSTER.  
" YOSEMITE.....CAPT. W. BRONLEY.  
" CORNELIA.....CAPT. E. CONKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Steamships AJAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.

Office of the Company, northeast corner of Front and Jackson streets.

**B. M. HARTSHORNE,**

13v12

The Mining and Scientific Press commenced a new volume January 6, on new type of California make—the first of the style, the editors say, which has yet appeared in print on this coast. It looks well.—Humboldt Register



# MINING AND SCIENTIFIC PRESS.

Terms: One Year, \$5; Six Months, \$3.

Single Copies, Fifteen Cents.

A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, MARCH 16, 1867.

VOLUME XIV.  
Number 11.

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Scientific Miscellany—Negative Polarity of Rides; Production of Valuable Manure from the Atmosphere; A New Battery; New Hydrocarbons; Improvement in Roadway Fermentations; Indine in Minerals; Roller Incrustations; Magnetism; A New Light; Effect of Electricity on Sugar and Alcohol; How to Extract Coloring Matter from Ocher; Self-Acting Gun Carriage. MISCELLANY.—Cheapening the Production of Iron; Temperance Mining Field; An Improvement in the Manufacture of Bars of Metallic Iron and Steel. MINING SUMMARY—Embracing late intelligence from the various counties and districts in California, Arizona, Idaho, Montana, Colorado and Nevada. Mining Shareholders' Directory. Mining Stock Sales of the Week. San Francisco Market Rates. San Francisco Weekly Stock Circular. Stock Prices—Bid and Asked.

## Interesting Mill Experiments.

A correspondent of the Marysville *Appeal* gives the details of some experiments at the Pennsylvania Mill in Brown's valley, instituted with the view of learning the economy or otherwise, of grinding the sands after they pass from the battery.

The tailings from one battery of four stamps, were conducted directly to Chili Mill, No. 1, after having passed over rifles and copper-plates; they were fed in continuously at one side and discharged at the opposite. Result—nothing.

Chili Mill, No. 2, was filled every two hours, by having ten shovelful of sand thrown into it; after running two hours it was carefully discharged. Result, in 24 hours, from 120 shovelful of sand; eight ounces of amalgam.

Chili Mill, No. 3, was filled and discharged in the same way every three hours, in the same manner and with the same quantity. Result, in 24 hours, for eighty shovelful of sand; sixteen ounces of amalgam.

Chili Mill, No. 4, was filled and discharged in the same manner every four hours. Result, in 24 hours, for 60 shovelful of sand; twenty-four ounces of amalgam.

A box placed at the end of the sluices to save floating gold, saved five ounces of amalgam.

A similar class of experiments recently made in Grass Valley, is said to have shown that three-fifths of the gold was the result of trituration after the sand had passed from batteries, and over rifles and copper-plates. The reports of their results are not so complete and minute as are desirable; but they are quite sufficient to open the eyes of our miners to a more careful and thorough working of their ores. All experiments hitherto reported, go to show that where concentrating and grinding is neglected, a very large, if not the largest portion of the gold contained in the quartz is lost.

The amount of gold saved in the batteries, in the Brown's valley experiments, is not given; but the large increase in the yield for four hours, over two hours grinding, is very noticeable; and if subsequent experiments should show that this was not an accidental occurrence, the result is a most important one. The experiments are certainly worth repeating; and if repeated we shall endeavor to give the results.

The unsatisfactory result from Chili Mill, No. 1, shows most conclusively the advantage of working with regular "charges" over that of continuous feeding and discharge. The entire loss was probably owing to the use of too much water, or too low a discharge orifice.

An experiment similar to the above, conducted with pans, would be particularly interesting. We fully agree with the correspondent of the *Appeal*, that it is not the quantity of rock crushed, nor the quantity of tailings we put through our grinding machines; but it is mainly the time devoted to the operation, which, in all cases should be sufficient to make the work thorough and complete. The treatment of auriferous ores,

in all parts of the world, is yet in its infancy; and a most encouraging circumstance, so far as this country is concerned, is the fact that this admission is now pretty generally concurred in by our quartz miners. That fact once admitted, our mechanics and mill men will soon devise ways and means to meet the want of a more thorough working. We have faith to believe that the present year will unfold some most valuable developments, in this important branch of the world's industry.

CANDLE MANUFACTURE IN SAN FRANCISCO.—We are gratified to state that some of the parties who were interested in the candle manufactory of Scoville & Co., which was recently destroyed by fire on the Potrero, have commenced the erection of new works at a point a short distance beyond the old Mission church. The building and works, now going up, will be better adapted to the business than those destroyed; some alterations being introduced which have been suggested by past experience. The fact that those who have already had experience in this business, and who have suffered severely by the casualty of fire, are ready to once more try their fortunes therein, speaks well for the success of the enterprise; and we sincerely hope that better fortune may attend the second attempt to introduce this important branch of manufacture into California. In traveling through the mines, it has come to our personal knowledge that Scoville & Co's candles, hold a good reputation by most or all who have heretofore used them, and we doubt not but that all who feel an interest in building up home manufactures will still continue to give them a preference over the imported article, whenever they can be obtained at equal price and quality.

We further learn that the establishment at North Beach, which has hitherto, for some reason or other, unknown to us, done but little in the manufacture, has now passed into the hands of the Standard Soap Co., which company will hereafter drive these works to their fullest capacity. The time will soon come, as it should have done before this, that California will be independent of other parts of the coast for this indispensable "light for the mines," and other places.

CHINESE AND ENGLISH PHRASE BOOK.—Messrs. A. Roman & Co. have sent us a copy of a duodecimo of 80 pages, with the above title. It has, in Chinese, a great number of the phrases most likely to be used in ordinary conversation, with the translation, and the Chinese pronunciation indicated in English. There is a table of contents, in which the subjects of these phrases are classified, and pagged, so that the desired sentence may be easily found. Benoni Lanctot, the author, states in the preface, that the dialect used is the one most generally understood by all classes of Chinese on the Pacific coast, most of them being from the Canton district. The work supplies a want that is beginning to be felt here.

## Under the Snow.

Some fifty Chinamen, engaged in excavating the tunnel on the railroad line, near Donner Lake, were recently buried under a snow slide. About thirty were rescued; all the others are reported to have perished.

It is generally supposed that a person can live under the snow for a long time; but this is true only when one lies quietly down and is covered by gently falling snow, or dry snow drifting upon him. In light snow, there is a large quantity of air, and a person buried in it, if at no great depth, may be reached by the air from the surface. But if the snow falls damp, and becomes packed, so that it may be cut up and readily handled in large blocks, without breaking, a person imbedded in it, cannot live much longer than though he was covered with water. In a slide the snow is usually closely packed by the weight and resistance of the moving mass; hence if a person is buried to any considerable depth under such snow, rescue must come quickly or death will ensue. Some two or three years since, four well known citizens of Calaveras county, were buried by a snow slide; one of them, Mr. Hansen, was taken out alive, but unconscious, after he had been covered only about fifteen or twenty minutes. He gives the following account of his experience:

He first saw the slide about five rods off; he got hold of a bush and tried to stand up, but the first part of the slide threw him down, covering him to his shoulders, and he was entirely covered by the last portion. He could not move, except his head a little. He butted the snow with his face, so that he had a little air, and hallooed some ten or twelve times, thinking that some of his party were not buried, and would come to his aid. He then lost his consciousness. At first, he could get breath into the lower part of his lungs; but his breath, he said, kept rising, until the last he recollects, was, that he could breathe only into the upper portion. He heard nothing of the others. There were no signs that the others had stirred. It was so packed about Mr. Mercer, one of the persons killed, that when he was uncovered to his knees, they tried to draw him out, and were not able to do so.

BESSEMER, the inventor of the Bessemer process for making cast steel, is said to be receiving \$500,000 a year for the use of his invention. The amount of steel turned out by this process in England, alone, in 1866, is estimated at 250,000 tons. How striking the contrast between him and Cort, the inventor of the puddling process, who died as recently as 1850, poor and broken hearted; and still his invention, at the time it was made, was quite as valuable to the world, as was the invention of Bessemer.

EXCEPTION TO ROTATION.—It is well known that rotation in crops is essential to successful cultivation. Onions, however, are said to be an exception to the rule. In Weathersfield, onions have been raised on the same ground for a hundred years. Only half to two-thirds of a crop is ever realized on land not previously devoted to this crop.

THAT'S WHAT'S THE MATTER!—The *Amador Ledger* of March 2d, has an editorial article on California "wants;" and speaks of the chief one as being "a process whereby all the precious metals may be saved from ores worked." It happened that the next paper which we took up after reading this, was one stating the fact that the first lot of sulphurets worked by Mr. Deetken, at the chlorination works of the Eureka Company, Grass Valley, went within one per cent. of the fire assay! This is suggestive. May it not be that there is, now, right here in San Francisco, everything that is wanted, in the shape of men whose scientific attainments and practical experience would enable them to work any ores in the State? It will not do to attribute want of success in working any particular class of ores solely to the imperfection of the apparatus. Without doubt, in many cases, science is what is lacking; without doubt, the intelligent application of known scientific truths, to the particular case in hand, would often solve the difficulty. But science and experience cannot be had, except at a price such as other professional experts expect to receive in excess of that paid to the rank and file. The candidates for such positions should moreover be subjected to such tests as would effectually prevent the possibility of the selection of any but such experts. In a future number, we may make some suggestions as to the manner in which these tests might be made.

NITROUS OXIDE vs. CHLOROFORM.—A French dentist by the name of Preterre, states that after a considerable amount of experimentation with protoxide of nitrogen, he is strongly in favor of it as an anæsthetic agent. The extraction of teeth, or any operation which does not occupy any length of time, can be done by its aid with perfect ease. The nausea and the depression which often follow the use of chloroform or ether, do not occur.

STEEL has only from one to one and a half per cent. of carbon—while cast iron has four or five per cent.

FOR OUR CABINET.—We have on hand several mutual contributions for our cabinet, which will be fully acknowledged next week.



## Communications.

In this DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## "Breakage of Steamboat Shafts."

J. S. PHILLIPS, C. E. M., M. E.

MESSRS. EDITORS:—Observing an article in your publication of February 2d, alluding to this subject, which concerns all travelers; and having heard it verbally discussed previously, from its too frequent occurrence, I am incited to forward the following method of general manipulation adopted by the best English firms, and refer those most interested to the valuable experimental tests on the relative strength of iron made by different processes, recorded by Rennie.

The scrap iron obtained by waste forgings, and various worn out articles purchased from old iron dealers, and which are generally of the best quality, because most proprietors know that when work has to be forged to shape, the best is ultimately the cheapest—form the principal supply of these small accumulations, which are placed at all angles, in a sheet iron case, on the end of an iron bar, flattened to retain it securely during its heating in a brick furnace; the other end constituting the handle for transferring the semi-molten faggot to and under what is denominated a "tilt hammer," where it is kneaded between the narrow blocks at a varying angle of about 45° therewith, which is crossed by inversion of work, thereby preventing the tendency to grain in any one direction by this transition. It is cut off, and others are worked on the same handle, shaped and sized as required for after formations.

When a shaft is to be made of any length, these are forged, as above, into such lengths and sizes as are most suitable, and are huddled on a central bar, in concentric rings, fastened by small, flat binding rings, until the first heat solidifies a portion thereof, under the action of a heavy steam hammer, as it rests in a V-shaped anvil-block, compressing the homogeneously prepared bars into intimate union by triangular action, driving the deleterious slags endways before each advancing operation, which insures cohesion of molecules and superior quality. If the skin of the shaft be allowed to remain, this will be stronger than another turned down to size. This contrasts favorably with the plans of slabbing or welding forward in lengths; the iron partaking more of lineal, than transverse or tortional strength.

To illustrate the comparative strengths of iron, faggotted from small scrap, I may state that the eminent Low Moor Iron Company, after tubular boilers were preferred, seeing the necessity for better end plates than had been made by rolling, devised the arrangement of bars of small iron, previously selected, in layers of different angles; or scrap iron in systematic ramifications, to insure the desired equality of strength, and keeping it by the continued advantages of the steam hammer's divergent expansion, and correcting its thickness by rolling, both side and endways with the plates, to finish. This admirable arrangement produced the desired effects—a plate free from the hitherto dangerous and perplexing weakness between the perforations for the tubes, a boon supplied to the public and monopoly of manufacture at much higher price.

In Cornwall, a similar system had been practiced for many years, by Messrs. Harnly & Co., and others, for the machinery of mines. Its superiority is fully recognized by the fact of fifty per cent. extra being given for such iron, and its application to the most responsible places—such as side connection plates for large wood pumping rods, that extend from the surface to 2,000 feet deep; the steam engine working-gear; and lastly, the miner's pick, which is probably the most exacting test of its superior strength and durability. It is harder, more compact, of greater specific gravity and tenacity from varied forces, partaking of the nature of steel, for more uniform strength and durance, though possessed of the advantages of standing much greater heat, and consequent facility of manufacture, welding, etc.

As all practical machinists know that the iron made from the ordinary methods, with-

out this provisional intention for equalization and distribution of fiber, possesses cleavage and consequent weakness, it follows that for tortional strain, it is less adapted because of greater vibratory motion, created by the varying forces applied thereon, provoking electrical changes, from its originally fibrous, to granulous texture, which, exceeding the modulus of elasticity, fracture ensues.

Humboldt City, Nev., Feb. 21.

[Written for the Mining and Scientific Press.]

## Separation of Ores—Is it Necessary?

EDITORS PRESS:—I have asserted, through your columns, that the perfect concentration of ores, by means of washing machines, necessitates previous separation into different grades of size. Since that time the subject, previously neglected in this country, has received much consideration; and some have taken exception to my views, which, however, are sustained, not only by well known natural laws, but by the best European practice, and the highest scientific authorities, among whom are Regnault, Overman and Rittinger. If I am wrong, I have at least erred in good company.

The practical application of a theory, however perfect, is governed by possibility and expediency. We cannot do the impossible, nor wish to do that which is not profitable.

There are, doubtless, many cases in which the operation of "sizing" may be dispensed with; as when the whole of the matter is reduced to approximate equality by grinding, as at the Empire mill, at Grass Valley, where the ore passes from the battery through a set of Beth's grinders, and is afterwards treated in pans; or, the quantity of sulphurets may be small, or they may be poor; but when the sulphurets are rich, and the ore is not crushed very fine, it will be found advantageous. A Mr. George, an experienced washer of tin ores, who was engaged in washing, for the third time, the tailings from the Eureka mill, and whose pardon I ask for the liberty I take with his name, told me that he found it impossible to save the fine sulphurets without first treating them in a "huddle," so as to separate the different sizes.

It is true that the "circular shaking table with central discharge" has an advantage over some other machines in this respect, owing to the fact that the current near its circumference is superficial, and almost imperceptible, while the oscillating motion keeps the sand in a loose state, permitting the smaller particles to wedge in between the larger, and facilitating their effect of specific gravity; yet this action has its limits. Furthermore, the sands are more perfectly treated when freed from the slime or mud, which is always present more or less. This is of less importance when the rock is a hard, clean quartz. In the case of silver ores, this slime is frequently the richest portion.

It would be useless in this country, to recommend any process involving repeated handling of the ore. This and the flouring of mercury, are the main objections to working, "by charge," in pans, and to Rittinger's boxes, which discharge at the bottom; but sizing the tailings can be done without handling; and one box will generally be sufficient, its contents can be washed out, and directly into a concentrator.

It is impossible to lay down special rules for all mills. Every case must be decided to a certain extent on its own merits; for, though the fundamental principles are immutable, the variety of conditions is infinite. Many costly errors have been committed for want of attention to this point.

The nature of the ore, the fineness of the gold, quantity of water at command, description of crushing machinery, and situation of the works, from an ever varying combination by which results are modified.

Owners of mills should employ a person possessing the requisite knowledge, and reliable for discernment and accuracy, to determine by observation and experiment, and not by theory alone, the best method of working under attainable conditions. This once done, the work could be continued by a man of less extensive knowledge.

In conclusion, I will observe that the concentration of ores, and separation of mercury, is a subject that is worthy of careful study. It is one of the most difficult, as well as important problems of metallurgy.

C. H. AARON.

[Written for the Mining and Scientific Press.]

## Is it too Late for Sowing Wheat?

BY PROFESSOR ROWLANDSON, F.G.S.L.

EDITORS PRESS:—Many of your readers will probably feel surprised at seeing an article from me under the above caption. A few, however, will probably remember that during the eventful floods of 1861-62, several letters of mine which appeared in the *Sacramento Union* and *San Francisco Bulletin*, on the then all-absorbing subject, attracted no small share of attention. Very few, however, are aware that agriculture as well as mining, metallurgy, chemistry and geology, has long been made a special study by me. These prefatory observations are needed, in order to excuse what might without such explanation be deemed impertinent. The question of the prime "staff of life" to the community generally, and especially the laboring man and his family, is, however, sufficiently important to justify even a slight deviation from ordinary routine, when the actuating motive is for a general and not a personal benefit. The following quotations from an article on the subject, which appeared in last Monday's *Alta*, has given rise to the present communication:

"The continued rains affect the agricultural districts unfavorably. In the Sacramento Basin, from Shasta to Visalia, the farmers complain that the ground is too wet for either plowing or sowing. The *Stockton Independent* says it is now too late to put in grain, but endeavors to draw consolation from the idea that a better system of cultivation will be adopted hereafter. It says: 'The rain this winter has benefitted farmers, inasmuch as it gives proof of the necessity of late spring plowing, and early sowing in the fall. It is to summer-fallowed fields that we must chiefly look in the present season for our cereals. Those who had not plowed their land before the first heavy rains, have been debarred from doing so ever since; and were the sky to become clear to-day, and so continue, it would be a week or two before the valley land could be worked without doing it great injury. But even if land could be plowed during the present month, the season for wheat to grow and mature would be so short that a full crop could not reasonably be looked for. Our winter storms, then, benefit the agricultural interests of the State, inasmuch as they teach farmers a profitable lesson.'"

In brief, late sowing, as a general rule, in California, is to be deprecated, chiefly on two grounds. First, because if wheat is sown so late as March or April, in the majority of years the droughts of summer will usually dwarf the crop. This cause is so apparent and well understood, that it need not be dwelled upon further. The second, and perhaps less understood cause of failure, arises from the fact that it has generally been observed that late sown wheat, especially on lands exposed to the influence of the "summer winds," are often seriously damaged by a disease often denominated blight, but more particularly known as "rust," which destroys not unfrequently from one to two-thirds of the anticipated crop, the balance being also of inferior quality. I think it will be admitted that, generally, when a loss of crop has been occasioned in consequence of the presence of rust, it has occurred almost always with crops sown during the months of January, February and March; but especially during February, and usually during seasons when moisture has been moderately abundant until the month of April and not afterwards. It may be here mentioned that the rust or blight alluded to, is produced by a minute cryptogam or fungus, which disseminates itself through the entire, but chiefly in the generally luxuriant leaves of the wheat plant, in consequence of the existence of favorable conditions for its development—cold and moisture. Now, my theory is this—if wheat is sown during any fine weather between the present time and the second week of April, the chances are strong that sufficient moisture will fall between now and the first week in June to push the plant sufficiently forward to be out of danger from drought; the dry weather which will subsequently ensue will prevent all danger from rust, for the latter is the consequence generally of an over-succulent foliage, and would be perfectly checked by the drought of summer. In conclusion, I may explain that the above recommendation for farmers to sow wheat this season, up to at least the first week in April, is based upon twelve years' observa-

tion; that I have always remarked that during seasons at all approximating to the present for rain, we have never been without sufficiently ample growing showers up to and sometimes into the month of June.

For the emergency of such seasons as the present, prudent California farmers might always be prepared with the seed of some variety of spring wheat.

## The Occidental Mine, Virginia City.

VIRGINIA, Nev., Feb. 18th, 1867.

MESSRS. WESTON & Co.—Gentlemen:—On the 5th of September last I made an inspection of the Occidental mine, at your request, and the results of my observations and assays were communicated in my report of the 10th of that month. In that paper, I stated that a new tunnel had been commenced, with a view of cutting the vein at a perpendicular depth of 200 feet below the then lowest level (160 feet below the crop-pings). One hundred and eighty feet of this lower tunnel had then been completed, and the casing of the vein reached, which presented the same mineralogical character as the casing of the pay ore in the upper workings.

On the 15th of this month, I made another inspection of the mine, and was much gratified to find that my anticipations of September have been fully realized, both with regard to the quality and quantity of the ore reached, although, from an unexpected variation in the dip of the vein towards the perpendicular, the tunnel (running diagonally with it) has had to be carried to a greater distance than was then anticipated. It is now in 400 feet, and a rich body of ore has been struck, which is proved by the incline connecting it with the upper (160-foot) level to be an *uninterrupted continuation* of the fine body of ore which has supplied your mill, and by which upwards of \$250,000 has been extracted up to the present time since the commencement of work on the mine, eighteen months ago.

At this part of the mine the portion of the vein carrying the pay ore has been found to average about twelve feet in width, and, as it has been drifted on, east and west, I calculate that not less than forty tons per day can be taken from this tunnel as soon as it is sufficiently opened to admit an adequate force of men. Thus, on the very moderate calculation that the pay rock does not continue of its present quality (as shown by the following assays) and quantity, for more than *one-tenth* of the extent of your claim (of 1,800 feet), you have, at the present moment, not less than about *four years'* consumption in sight at the rate of forty tons per day.

Should, however, another tunnel be opened at a lower level, I see no difficulty in extracting from 100 to 150 tons of ore per day, which would then place your mine on a par with the best on the Comstock. This operation, however, would be attended with a considerable outlay of capital, which would probably remove it beyond the limit of individual enterprise, and could be most advantageously conducted by a joint stock company.

In order to obtain an average of the quality of the ore now being extracted from the incline and tunnel. I took two samples from each of these parts of the mine, and by assay obtained the following results, viz:

FROM INCLINE—WEST DRIFT.	
Gold.....	\$20 09
Silver.....	75 34
DO.—EAST DRIFT.	
Gold.....	\$12 54
Silver.....	54 97
FROM TUNNEL—WEST DRIFT.	
Gold.....	\$7 13
Silver.....	101 09
DO.—EAST DRIFT.	
Gold.....	\$12 51
Silver.....	40 83
Giving an average of \$57.33 per ton.	

Assuming that the *average* of the bulk of ore thrown on the dump does not exceed \$60 per ton, and that, by the present imperfect system of reduction, only 50 per cent. of the assay value will be obtained at the mill (say \$30 per ton), the gross receipts for four years' working, at the rate of forty tons per day, would be \$1,752,000, or \$438,000 per annum.

With the very liberal allowance of \$12 per ton for extraction, hauling and reduction, it follows that the annual *profit* cannot fall short of \$262,000, or \$1,051,200 from the amount of ore now in sight, and which may be realized within *two years* by a proportionate increase of your facilities for extraction and reduction. I remain, gentlemen, your very obedient servant,

W. T. RICKARD, F.C.S., &c.



## Scientific Miscellany.

**NEGATIVE POLARITY OF RIFLES.**—John Spiller, F. C. S. writes the *Chemical News*, Jan. 11th, 1867: "I find that all the long Enfield rifles, of the arms in possession of the volunteers of my company, exhibit negative polarity, as the result of the violent and repeated concussions attending the discharge in a direction parallel to the magnetic meridian. The Royal Arsenal range runs nearly north and south, and our rifles, when in use, are always pointed either due north, or a few degrees toward the west; in fact, nearly in the direction indicated by a compass needle, so that the repeated shocks brought about by the explosion of the powder, may be considered equivalent to so many hard blows from a hammer, which we know to have a similar effect. The negative character appears to be permanent—which would not be the case if the gun barrels were of the softest description of malleable iron; and the region of the breech is in every instance possessed of north polarity, since it strongly attracts the north pole of the compass needle."

**PRODUCTION OF VALUABLE MANURE FROM THE ATMOSPHERE.**—The highly important agricultural problem of the fixation of the nitrogen of the air in the form of ammonia has been solved by MM. Marguerite and De Sourdeval. Their process is founded on the cyanization of barium, and the subsequent decomposition of the cyanide by steam. A mixture of carbonate of baryta, iron filings, refuse of coal tar, and sawdust, is first calcined through an earthen retort; through the porous mass thus obtained, a current of air is passed, the oxygen of which is converted into carbonic oxide, while its nitrogen is transformed in the presence of charcoal and harim into cyanogen, and produces considerable quantities of cyanide of barium. The calcined mixture is introduced into a strong iron cylinder, and a current of steam at a temperature less than 300° is passed through it. All the nitrogen in the cyanide is disengaged under the form of ammonia. It is impossible, observe the authors, to foresee all the results of this discovery. Among other things it suggests the production of nitric acid from the air by oxidizing ammonia.

**A NEW BATTERY.**—M. Rouillon has described before the French Academy a new arrangement for generating an electric current by the action of aqua regia. A mixture consisting of two-thirds hydrochloric acid, one-third nitric acid, or three-fifths hydrochloric and two-fifths nitric, will easily dissolve gold and platinum, but will only superficially attack pure unalloyed silver; a superficial chloride being formed which protects the rest of the silver like an impermeable varnish, however long it may remain in the aqua regia. If copper be present, the metal is attacked. Rouillon has utilized this fact by making a battery in which pure silver in aqua regia replaces carbon of the Bunsen cell, or platinum of the Grove, in nitric acid. After using the new battery for several months he found no diminution in the quantity of silver and no chloride of silver was formed in the porous cell. The inventor states that his battery is more constant than Bunsen's. If further tests confirm this statement the new battery will soon be brought into practical use.

**NEW HYDROCARBONS.**—Messrs. Friedel and Ladenburg have succeeded in preparing a new hydrocarbon, isomeric with the hydride of anthracene, which they represent by the formula expressing a combination of one atom of carbon with two atoms of methyl and two atoms of ethyl.

The above, we infer, is a different compound from that to which the name of "Chemozene" has recently been given by Prof. Van Derweide, of Philadelphia, who first brought it into notice. Chemozene boils at 40° Fahrenheit.

**IMPROVEMENT IN PROMOTING FERMENTATION.**—Sulphuric acid has been extensively used by distillers of molasses for converting the mash much quicker into vinous fermentation; this process has been improved by the addition of phosphoric acid, according to the suggestion first made by the French chemist Pasteur, who, regarding yeast as a plant containing phosphorus, believed the process of fermentation might be stimulated by that element. Practical results have proved the correctness of this theory, and many distillers now use the phosphate of soda.

**IODINE IN MINERALS.**—A correspondent of the *London Chemical News* of Jan. 4th, signing himself "Smatterer" says: In trying an experiment with about half a ton of German phosphate of lime and sulphuric acid, "I was astonished to see a very considerable evolution of iodine fumes. I exposed a sheet of paper, smeared over with starch, to their influence—the test was undeniable." In the next number, Jan. 11th, "F" answers him thus: "Iodine is known to be present in the phosphorite of Nassau; and Mohr cites the fact as evidence, that this phosphorite is of marine origin."

**BOILER INCrustATIONS.**—Friedrich, a German chemist, has published a method of preventing boiler incrustations, which, however, is only capable of limited application. He puts common pyroligneous acid into the boiler until the water faintly reddens litmus paper. This will, of course, convert the carbonate of lime into acetate, a much more soluble salt, but more of the acid must be added as often as the boiler is fed, since the excess will always distill off with the steam. When the carbonate is the only lime salt present in the water, this method will no doubt prevent the deposition of crust, and the common pyroligneous acid will probably be found as cheap to use as any boiler composition.

**MAGNETISM.**—"If an iron wire be twisted during or even after the passage of a voltaic current through it, the wire becomes magnetic. When the wire is twisted in the manner of a right hand screw, the point at which the current enters, becomes a south pole; in the opposite case, it becomes a north pole. If, during the passage of the current, the wire be twisted in different directions, the polarity changes with the direction of the twist."—*Mech. Magazine.*

**A NEW LIGHT.**—Professor Carlevaris, of Genoa, has invented a new light. It is an oxy-hydro-magnesian flame, and is obtained by placing in the flame of a mixture of hydrogen or coal gas, with air or oxygen, spongy magnesia, a substance of very small cost. The flame is white, rich in actinic force, fixed, and developing less heat than other lights. The expense is very trifling; a light equal to four wax candles, only costing two-tenths of a penny per hour.

**EFFECTS OF ELECTRICITY ON SUGAR AND ALCOHOL.**—It is well known that the effects of fermentation is to change sugar into alcohol, these two substances being composed of the same elements, but combined in different proportions—sugar consisting of  $C^{12}H^9O^6$ , while alcohol consists of  $C^4H^6O^2$ . Experiments have shown that under certain circumstances electricity produces the same effect on sugar as fermentation does, transforming it into alcohol. Niepce de Saint Victor, of Paris, has found that, by passing an electric current through very sugary white wine, the wine loses all its sugar, and becomes much more alcoholic. On the other hand, the effect of the action of light on absolute alcohol, under certain conditions, is to re-transform a portion of the alcohol back into sugar, the alcohol becoming very sugary, and having its strength reduced several degrees.

**HOW TO EXTRACT COLORING MATTER FROM OCHER.**—It is said that coloring matter may be extracted from the various ochers in the following manner: Bake the earths (ochers) in a furnace so constructed that it may be hermetically closed; or they may be baked in iron boxes so made that they may be hermetically sealed. After this treatment, the earths should be washed, to separate them from all foreign substances. The *La Genie Industriel*, of Paris, says that earths so washed make a coloring matter, the shades of which may be easily varied at pleasure, and which form a suitable body for a paint for buildings, and even for coaches, panels, etc.

**SELF ACTING GUN CARRIAGE.**—A Scotch captain, by the name of Moncrieff, has invented an arrangement by which the recoil of a cannon is utilized for the purpose of first throwing the gun into covered position for reloading, and then returning it to position for another discharge.

## Mechanical.

## Cheapening the Production of Iron.

NUMBER TWO.

In our last issue we made mention of the great increase in height and diameter of furnaces, which had recently been introduced into some of the English iron districts. The economy of these furnaces, at least up to eighty feet in height, with twenty-five feet diameter of boshes, has been well established—so well that the Rosedale and Ferry-hill Company were about to blow in a pair of furnaces 102 feet in height, with twenty-seven feet boshes. Two furnaces, ninety-five feet high, with but sixteen feet boshes, have been for some time in blast at Cleveland, England, and have been found to work without any difficulty from weight of superincumbent material or other cause.

It is not yet well determined whether the increased size of furnaces, or the increased heat of the blast has had the most to do with the great economy of fuel, which has now been reduced to 21 cwt. of coke to each ton of pigs from an argillaceous ore containing not over 31 per cent. of iron. A high stack saves fuel by permitting more of the heat of the gasses to be taken up by the materials in the upper part of the furnace; and as the gas is now all taken off and used as fuel for raising steam and heating the blast, it is an advantage to have it as cool as possible, while passing down through the large tubes from the top of the stack to the boiler furnaces and air heating stoves below.

These gasses are now drawn down by means of a steam jet, into a properly constructed hot-blast stove of large heating surface, from which the blast is conducted into the furnace, at a temperature of from 1,000° to 1,200°. The hot blast, as originally introduced, was employed at only 300° of temperature, and the engineers who effected that improvement, counted it as something really wonderful, that it could be economically accomplished. The stoves by which this was done some twenty years ago, presented only from 300 to 500 square feet of heating surface for each 1,000 cubic feet of blast supplied per minute; while some of the stoves now used have 1,250 feet of heating surface and deliver the blast at a temperature of from 1,000° to 1,200°. A single furnace of large dimensions takes from 6,000 to 10,000 cubic feet of air per minute.

In the early attempts to take off the gas, much difficulty and danger was encountered and explosions were of not unfrequent occurrence. With the present arrangement, such difficulties are entirely obviated. At first much of the gas was lost by being burned at the top of the stacks; now but little or none escapes, except through the regular mains leading to the stoves below.

In the best arranged works, the gas is found quite sufficient for raising all the steam required for both blowing and heating the blast. These improvements, it is said, have effected a saving of at least 30 per cent. in the cost of fuel. The method employed for securing, regulating and burning the gas and heating the blast are very ingenious, though not expensive in their details. The fullest information with regard to these matters may be obtained by addressing Mr. James Henderson, 218 Fulton street, New York. The cost of the larger furnaces in England, with calcining furnaces, boilers, blowing engines, stoves, hoists, mains and other materials connected with the "plant" is from \$75,000 to \$100,000. Such furnaces will turn out from 280 to 350 tons of iron per week.

**AMERICAN CHILLED IRON RAILWAY WHEELS** "live" for one hundred and forty thousand miles; the English wrought iron wheels about one-half that, if turned down two or three times. The face becomes uneven, but will be again serviceable for a time, if thus treated.

## Tempering Mining Picks.

There is probably no service to which steel can be put, which so effectually tests its value as in mining picks. The tempering of a pick is a very nice piece of work, and should be done with great care. In the first place a good charcoal fire is necessary, next good steel, then a good light hammer, with a smooth faced anvil, and lastly a man is needed with a good keen eye, considerable experience and excellent judgment. No good pick can be turned out if any of the above essentials are wanting in the process.

A pick should never be "upset" or hammered endwise, nor raised above a full red heat. The steel should moreover be heated as quickly as possible, as long exposure to heat—even if that heat is not in excess—injures its texture. Many blacksmiths find great difficulty in tempering picks, because they do not choose good steel. After being heated, the pick must be worked with care, special pains being taken, in drawing it out, to hammer on all sides alike—in one place as much as another, on one side as much as another.

When ready for hardening it should be heated in the blaze of a charcoal fire until red hot, and then plunged into cold rain water, and kept there until it is nearly cold; but if kept too long in the water, or until it is quite cold, the corners are liable to fly off. Some blacksmiths use salt water. No salts, of any kind, should exist in the water; but the water should be cold; if the water is warm, if a little ice should be thrown in to chill it, the tempering will be all the better. Pure soft water for hardening will make a tougher pick, and one less liable to crack at the edges, than where salt water is used.

The last hammering of a pick should always be given on the flat sides, and across close to the edge, and then up each side about an inch. By so doing the corners will be less liable to crack off. The same process will work well with all edge tools. These directions have been gathered from various sources; mostly from writers in the *Scientific American*, at different times. Only such have been given above as all appear to agree in. Should the careful experience of any of our readers disprove anything of the above, or suggest anything new, we should be happy to report the same. Good, well proportioned and well tempered picks, in mining operations, is a most important consideration; and their "sharpening" should never be trusted to unskilful hands.

**AN IMPROVEMENT IN THE MANUFACTURE OF BARS OF MALLEABLE IRON OR STEEL.**—An invention has recently been made in England, for treating bars of malleable iron and steel in such a manner that they will receive a smooth and polished surface, which will not be liable to oxidize by exposure. Mr. B. Lauth, the inventor, makes, for example, an ordinary bar of malleable iron in its usual merchantable state, and removes the oxide from its surface by the application of diluted sulphuric acid, after which he washes the bar in an alkaline solution. He then covers the entire bar with oil or petroleum. The bar is then ready for the chief process. A muffle furnace is so prepared that a uniform, or nearly uniform, heat can be maintained within it, and in this furnace the bar is placed. Care must be taken that too great a heat is not imparted to it, for on this depends the success of the operation. When the bar approaches a red heat, and when the redness is just perceptible, it is a certain indication that the proper degree of heat has been attained. The bar is then at once removed, and passed through the finishing rolls five or six times, when it will be found to have a dark polished uniform surface, and the appearance of Russian sheet-iron.

The blue protective coating of the Russian sheet-iron is phosphide of iron.







## To Inventors

ON THE

### Pacific Coast.

Messrs. DEWEY &amp; CO.

Take occasion to call your attention to the following rules, regulations and suggestions relative to the obtaining of **LETTERS PATENT** of the United States:

#### Self-Evident Facts.

Having had large experience, and gratifying success with the great variety of cases emanating on this coast, we feel confident of our abilities to assist inventors in patenting their inventions, saving them from vexatious delays, and from receiving worthless papers by reason of imperfect preparation of their claims before being sent to the Patent Office.

The branch of Patent Law is of itself a **SPECIALTY** of legal jurisprudence; or, as Mr Phillips, an eminent Patent lawyer, justly remarked: "The metaphysics of the law."

In early days but little preparation was needed, but ordinary skill required to obtain a patent; but now, by reason of the multiplicity of inventions, and the numerous acts of Congress, found necessary to protect the inventor while the patent lasts, and to do justice to the people after it expires, the utmost care and skill are requisite in managing cases and obtaining a patent that will be of real value to the Patentee, and stand the test of passing through the legal ordeal of an infringement suit.

The general practice of the Patent office regarding the examination or issue of Letters Patent for inventions has not been materially changed for many years, yet there have been amendments added to the laws of 1861, 1863 and 1866, and which it is necessary for all parties managing an application to be conversant with. Old inventors invariably advise the employment of none but agents of responsibility and experience. As agents with such qualifications, we solicit your patronage.

#### Confidential Advice.

Those who have made inventions and desire to consult with us respecting the same, are cordially invited to do so. We shall be happy to see them in person at our office, or to advise them by mail, or through the **MINING AND SCIENTIFIC PRESS**. In all cases they may expect from us an honest opinion. For these consultations, opinion and advice we make no charge. A pen-and-ink sketch and description of the invention should be sent together with a stamp for return postage. Write plain, do not use pencil or pale ink; be brief.

Remember all business committed to our care, and all consultations, are kept by us secret and strictly confidential. Our permanent business interests demand, as it were, a sacred compliance with our obligations as solicitors, and in reference to our strict fidelity in this respect we refer to one and all of the hundreds of inventors and patentees on this coast who have patronized us.

#### Letters Patent.

A patent is an open letter, embodying all the language of an inventor or his agent, contained in the specification, without alteration, and is granted to citizens of the United States, or those who have declared their intention of becoming such, and is signed by the Secretary of the Interior and the Commissioner of Patents, with the seal of the Patent Office affixed. Its jurisdiction is for the whole United States, for the term of seventeen years.

A patent right is personal property, and is assignable, but cannot be seized and sold on execution.

#### What Claims can be Patented?

A knowledge of Ancient and Modern Mechanics and familiarity with American and Foreign patent issues and rejections, enables us to determine in a measure in all cases what can be patented, and how much can be claimed as new and novel, and be covered by Letters Patent. This is one of the most difficult questions encountered by both old and new inventors—*one* in which an experienced counsel is of great service—and yet it can never be positively determined except by presenting a formal application for a patent to the Government, embracing a petition, specification, model, duplicate drawings and payment of the first government fees.

#### Steps Necessary to Procure a Patent.

The **FIRST** thing required is a model, if your invention can be represented by one. It is not only immediately necessary in preparing the papers, but the law demands that the inventor shall, in all cases, furnish a model, which must not exceed twelve inches in any of its dimensions. A less size model will answer when more convenient. It should be neatly made, and of hard wood or metal, or both, varnished or painted; the name of the inventor should be engraved or painted on it in a permanent manner.

When the invention consists of an improvement on some known machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention.

As soon as the model is ready, it should be carefully boxed and shipped by express, or otherwise, to our address, namely: **DEWEY & CO., Mining and Scientific Press, San Francisco.** Prepay expenses and send express receipt to us by mail.

A full description must also be sent with the model, embodying all the ideas of the inventor respecting the improvement.

Simultaneously with the model, the inventor should send us the first installment of the Government fee, fifteen dollars. The money may be forwarded either by express with the model, or by mail. The safest way to remit is by draft on San Francisco, payable to our order. Always send a letter with the model, and also the remittance, stating the name and address of the sender. On the receipt of the model and Government first fee of \$15 in currency, the case is duly registered on our books, and the application proceeded with as fast as possible. When the documents are ready we send them to the inventor by mail, for his examination, signature and affidavit, with a letter of instruction, etc. Our fee for preparing the case is then due and will be called for. The case will then be presented to the Patent Office, and as soon as the patent is ordered to be issued the Government last fee of \$20 in currency will be required. The law states that every patent shall be dated as of a day not later than six months after the time at which it was passed and allowed, and notice thereof sent to the applicant or his agent. And if the final fee for such patent be not paid within the said six months, the patent shall be withheld, and the invention therein described shall become public property as against the applicant therefor.

Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless it is one of great complication, as the business can be well done by correspondence.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separate ingredients, sufficient to make the experiment, and also of the manufactured article itself must be furnished, with full description of the entire preparation.

The average time required to procure a patent, when the case is conducted at our agency, is three months. We frequently get them through in less time; but in other cases, owing to delay on the part of Government officials, the period is sometimes extended to four or five months, and even more. We make a special point to advance our cases as rapidly as possible.

#### Saving of Time.

In urgent cases for an immediate patent, persons can deposit the amount of the last fees with us, in San Francisco, and have our Washington agent procure the issue of the papers as soon as granted, saving the two or three months time which would otherwise be required for the inventor to receive notice and then forward the money. Money advanced for this purpose will be returned, should the application be rejected. By adopting this course, we are enabled, with our other advantages, to secure the receipt of patent papers to inventors on this coast, at least four or five months sooner than can be done through agents in the East, without the applicant going to the hazardous expense of sending on the last fee before it is known whether the patent will be granted.

#### Expense of Applying for Patent.

The Government fee, on filing an application for a patent in the United States, is fifteen dollars; and if the patent is allowed, twenty dollars additional is required. If rejected, the first fee of fifteen dollars is all that is demanded. English, French, Austrian, Prussian, Spanish, and inventors of every nationality, may now obtain patents in the United States upon the same terms as our citizens. The only discrimination made is against subjects of governments that discriminate against the inhabitants of the United States.

To the foregoing official fees must be added fees for preparing the various documents and expense of drawings. Our charge for preparing a case, presenting it to the Government, and attending to all business connected with it, varies from \$20 to \$40.

Following is the list of Government fees:

On every caveat.....	\$10
On every application for a patent, for seventeen years.....	15
On every application for a design, for 3 yrs and 6 mos.....	15
On every application for a design, for seven years.....	15
On every application for a design, for fourteen years.....	20
On issuing each original patent.....	30
On filing a disclaimer.....	10
On every application for a re-issue.....	30
On every additional patent granted on a re-issue.....	30
On every application for an extension.....	50
On the grant of every extension.....	50
On appeal to the Examining-Chief.....	50
On appeal to the Commissioner from Examining-Chief.....	50
On every appeal to the Judges of Circuit Court.....	25

#### Caveats.

A caveat is a description of the invention designed to be patented, lodged in the Patent Office before the patent is applied for, and while the inventor is perfecting his design. When properly made, it operates as a bar to applications respecting the same invention from any other quarter; but when improperly done, it is inoperative by reason of such defect. The Patent Office always returns a receipt for caveat papers with a copy of the laws governing the same, but does not seek to point out its incorrectness, unless there be some glaring defect.

If worth filing at all, these cases should be prepared with very great care and caution.

One inventor on this coast, who had filed a caveat by an attorney, was, sometime afterward, surprised to find that his invention, which was a very important one, had been patented and was being brought out by an eastern company with a capital of more than a million of dollars. Upon inquiring at the Patent Office, he was informed that his caveat was inoperative by reason of imperfections and his not having complied with the law in that case as made and provided.

Our fee for the service varies from \$10 to \$20. The Government fee, under the new law, is reduced to ten dollars. This latter sum does not now apply, as heretofore, as part of the fee on presenting an application for a patent.

Inventors will oftentimes find it very important to take advantage of the caveat system—the expense under the law being comparatively small.

To enable us to prepare caveat papers, we only

require a sketch and description of the invention; no model being necessary.

If an inventor publicly uses and sells his invention, prior to making application for a patent, he cannot, afterward, prevent others from doing the same thing; and should any party put the invention into use, before such application for a patent is made, they could continue to use the specific machine or composition of matter after the patent is issued to another. Filing a caveat does not give the right to affix the words, "Patented," or "Patent applied for."

#### Patent Rejections.

First. Refusals are always made by the Patent Office if there is any informality in the specification, or if it does not contain the entire subject matter of the invention, and is not properly arranged and stamped. A slight omission often proves fatal.

Second. If the drawings are defective, and are not executed in an artistic manner in India ink, and on sheets of the required size, they are subject to rejection.

Third. Applications are always rejected where the claims conflict with others already patented.

If the rejection should be an unjust one—which sometimes happens—it can generally be reversed, and the patent obtained by contesting the case.

For the prosecution of such cases, obtaining references, making arguments, and personally attending to explain the case (through our agent in Washington), we charge no second fee, as is the case with some agencies, but attend to the business till finally allowed or rejected, without extra charge, beyond the Government fee.

Inventors who have rejected cases, prepared either by themselves, or for them by other agents, and desire to ascertain their prospects of success by further efforts, are invited to avail themselves of our unsurpassed facilities in securing favorable results. We have been successful in securing Letters Patent in many such cases. Our terms are very moderate.

#### Advantages to Patrons of Our Agency.

Some of the advantages to be obtained by patronizing us, may be enumerated as follows:

1. Inventors on this Coast having their applications for patents made out through our agency can sign their papers at once, and thus secure their rights at least *three months sooner* than by trusting the same to distant agencies, situated at New York or Washington.

2. As many of the inventions conceived here are especially adapted to the Pacific Coast, they should be properly brought out here, which can be accomplished (if the invention is a meritorious one) by illustrating the subject, with a careful description, in the columns of the "Mining and Scientific Press," free of charge; the inventor paying simply for the engraving, which will be executed at a moderate charge. The same cuts can be subsequently used for hooks, letters, or circulars. In a word, we are determined to make it of decided interest for every inventor on this Coast to patronize home talent and enterprise.

3. Most inventions on this Coast are for objects and purposes but little understood by parties at Washington or other parts of the East. Our mining machinery, processes and operations are best understood by those familiar with their use; and a personal, verbal explanation is oftentimes of important service, and enables us to be more successful than agents generally.

4. Remittances of money made by individual inventors to the Government sometimes miscarry, and it has frequently happened that applicants have not only lost their money, but their inventions, also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency. By sending duplicate correspondence to our Washington agent we avoid hazardous delays.

#### Dangers of Delay.

Situated so remote from the seat of Government, delays are even more dangerous to the inventors of the Pacific Coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this Coast for the signature of the inventor, or by reason of return for amendment when addressed directly by the inventor to the Government.

#### Re-Issues.

When, through "inadvertence, accident, or mistake," an insufficient or defective patent has been issued, the defects in the Specification and Claims can be cured by a *re-issue*. In order to obtain this, the inventor, or the holders of the patent, must surrender the patent, and file an amended specification and drawings, and a statement specifying the ground for asking for a re-issue. Re-issues are generally applied for after it has been found that the patent could not withstand litigation. It is, therefore, especially desirable that the new Specification and Claims should be prepared with great care and skill. Terms liberal in these cases.

#### Foreign Patents.

In addition to American patents, we secure, with the assistance of co-operative agents, claims in all foreign countries which grant patents, including Great Britain, France, Belgium, The Netherlands, Prussia, Austria, Russia, Spain, British India, Saxony, Hanover, Sardinia, Norway, Sweden, Australia, Mexico, Victoria, V. I.

Many valuable and important inventions of Americans are being yearly surreptitiously patented in foreign countries, some of which governments allow it, thus depriving those who have valuable inventions from their rights.

Patents obtained in England, France and Belgium, will secure the rights of an inventor among

many millions of the most enlightened people on the globe; it is therefore very important, if the invention is valuable, to secure foreign patents.

Our schedule prices for obtaining foreign patents, in all cases, will be as low, or lower, than those of any other agency.

#### To Eastern Inventors.

Our close proximity to Mexico, Australia, and the Islands, enables us to obtain Letters Patent for you with much less delay and expense than they can be secured through any other agency in the United States.

Comparatively few inventors seem to be aware that Melbourne, in Australia, is a city nearly double in size to San Francisco, besides the adjacent colonies of great commercial and mineral importance. Inventions of all kinds, but especially those relating to the saving of gold and silver, if secured in Australia, will often prove of great value. We have competent agents there, and can promise that the business will be attended to with fidelity and dispatch.

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## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

The *Miner* has an editorial on "The true Policy." It urges the Alpine men to "put their shoulder to the wheel, and help with all the means at their command to put up and work small prospecting mills and furnaces," in order that the method of profitably extricating the precious metals from the ores of that county may be determined by actual experiment. They have waited on "San Francisco smarties" and Eastern capitalists long enough. They must first prove, by the shipment of bullion, that they have rich ledges; then there will be no lack of capital. The trouble is, that although there are mills now idle in the county, it is not for lack of ore, but because they are not adapted to that peculiar class of ores.

The product of the first working of Leviathan by the Alpine mill is before us in the shape of a brick about three inches long by one three-quarters wide and an inch thick. An assay of the bullion shows the result per ton of ore to be—gold, \$95.60; silver, \$35; copper, \$15. The ore worked was not selected. This has been a thorough test of the Freiberg amalgamation, and also of the pan process, of working this ore, and, though the result is good, it is found, as in the case of the Morning Star ore, that there is too much metal in it to work profitably by any other process than smelting.

## Amador County.

From the *Ledger* of March 2d: The last lot of rock taken from the Anaconda mine, at Pine Grove, and crushed at Paugh's mill, paid \$20 per ton; in addition to this, the owners had previously pounded out in a hand mortar, from the same lot of rock, sufficient gold to make the rock pay, in the aggregate, \$36 per ton.

After lying still for three weeks, on Monday last the Coney & Bigelow mill was again put in motion, and the whistle is now heard regularly at morning, noon and night.

## Calaveras County.

From the *Chronicle* of March 8th: E. Grant, who has been engaged for some time past in prospecting the bed of Rich Gulch, struck some very rich gravel last week. Eighty dollars was taken out by him from a space not exceeding six feet in length. Howell & Co., have been busily engaged working their claim. Hoey & Co., in the same district, have been doing remarkably well during the entire winter.

## El Dorado County.

From the *Placerville Courier* of March 9th: Mr. McManus has shown us a very rich piece of rock from the claim of W. W. Stewart & Co., at Kelsey. The piece shown us is a fair sample of a large lot of rock taken out of the shaft at a depth of eighteen feet. The ledge is two and a quarter to three feet wide.

From the *Democrat*: Judge Reid & Co. have taken up and are prospecting a mammoth quartz ledge, near Webertown, Diamond Springs township, about three miles from this place. They have sunk a shaft to the depth of thirty feet on the ledge, and are now running a tunnel to tap it. The tunnel will be about 180 feet in length. The ledge is from ten to fifteen feet in width.

## Los Angeles County.

From the *Wilmington Journal* of March 9th: Quite a buoyant feeling prevades many in the city of Los Angeles, owing to the discovery of rich gold quartz in Soledad mining district, in Los Angeles county. A specimen now in our possession, is of the richest character. Responsible and reliable parties are now at the spot, and in a short time will render a true statement.

## Mariposa County.

A letter from Coulterville March 6th, to the *Gazette*, March 9th: Douglas, Chamberlain & Co. have been driving ahead with their usual energy. They are taking out very good ore.

A San Francisco party have purchased, conditionally, the Mary Harrison and Malvinia veins and mills, from the French Company, and will start in a few days with a full force. Dr. McLano is working vigorously in his mine at Pinon Blanco, and will, no doubt, erect a mill during the present season.

There is yet no machinery in operation on the Virginia.

Messrs. McKee & Flannigan have now two arrastras in operation. They took from one arrastra, for five days run, about 125 ounces.

The old Goodwin mine on the North Fork, now owned by Peter Wynants, is a paying property—the last crushing yielding \$55 per ton. They are now sinking a shaft for another level.

Close by the above, on the North Fork, is Mr. H. Coward's mine, which is doing better than ever. In a five days run with a 5-stamp mill, he took out over 200 ounces, besides carrying into Coulterville a considerable quantity of ore that was too rich to put through the battery. The Marble Springs mine is looking well. The Jenkins Bros., on Bull Creek are doing well. The Ferguson mine is paying largely.

## Nevada County.

From the *Gazette* of March 7th: French Corral, has been remarkably dull the past three weeks, on account of trouble between the water company and the miners. It is rumored, however, that terms of compromise are under consideration.

Same of 8th: We are informed that a rich strike was made yesterday in the north drift of the Pennsylvania mine. The ledge is said to be two feet wide, and very rich in free gold.

Same of 9th: Morrow and Cobb cleaned up a day or two ago, in their hydraulic claims at Scotch Flat, after ten days' run, the yield being \$1,830. The Dutch boys—Johnson & Co.—whose claims are near by, cleaned up \$1,000, from a ten days' run.

Same of 11th: Eighteen tons of rock from the first northerly extension of the Banner mine, was crushed last week at Stiles' mill, and cleaned up on Saturday. It yielded a little over thirty seven ounces of gold, worth twelve dollars an ounce—the rock paying about twenty-five dollars a ton.

We understand that the suit of Horace Beach against the owners of the Eureka mine has been settled—the latter paying Beach \$4,500 for his claim.

The cement mill of Goodspeed, Carney & Co., at Hunt's Hill, which was destroyed by a cave of the bank some two months ago, has been rebuilt, and will be started again to-morrow.

We are informed that Williams & Co. have struck the richest kind of cement gravel, in their claim at Red Dog, and their mill is kept running night and day.

The earnings of the Eureka mine, at Grass Valley, for some time past have amounted to \$30,000 a month, that being the regular monthly dividend. Since the 1st of this month, however, the sum of \$50,000 has been divided among the owners, amounting to \$2,500 an interest.

Same of 13th: It is probable that one or more companies will be organized the present season for the purpose of re-opening the old Nebraska and Live Oak channel. Some four thousand feet of this was worked in the three or four years following the location of the claims in 1852. Three millions of dollars have been taken from it. This channel in all probability extends ten or fifteen miles up the ridge. It is safe to conclude that every mile of it is rich.

From the *Transcript* of March 7th: The hydraulic claims formerly known as the Austin Diggings, at Scott's Flat, now owned by Summers & Co., after a run of ten days yielded between sixteen and seventeen hundred dollars.

Same of 12th: The Banner mine will, in all probability, show a larger return of rock for the year than any other in the country. The ledge is very large, and sufficient rock has been obtained to keep two mills in constant operation. A clean up of fifteen tons at Stiles' mill, last week, gave \$25 per ton.

From the *Grass Valley Union* of March 6th: Seven years ago, the owners of the Norambagua mine, located in Forest Spring, commenced the immense undertaking of running a tunnel from Wolf creek to their mine, a distance of eleven hundred feet. This tunnel, which is five feet wide by seven feet high, and drains the mine at a depth of two hundred and fifty feet, was completed on the 4th inst.

Same of 9th: The Osceola quartz ledge, situated half a mile south of Rough and Ready, was sold on Thursday last. We are not informed of the precise figures, but understand the sale was at the rate of one dollar per foot—there being 3,600 feet in the claim. The late owners were Messrs. Joseph Endey, E. W. Roberts, W. B. Ever and C. W. M. Smith; the purchasers, Thomas F. Mason, of New York city, and George W. Tew, of San Francisco. The new proprietors are men of means, and have purchased the mine, not for speculative purposes, but for actual working operations.

Same of 12th says: We have in this township twenty-five quartz mills, running 286 stamps, and two cement mills running 168 stamps. The capacity of quartz mills is 568 tons every twenty-four hours.

EXCELSIOR.—From the *Meadow Lake Sun* of March 2d: "What we want is capital. Nowhere, within the range of our observation, can such natural inducements for the investment of capital be found, as in Excelsior. All the apparent failures in milling

here, have resulted from two causes—in efficient machinery—and a want of adaptability of machinery used to the purpose required. To sustain this, it is only necessary to mention that those failures were upon rock, which gave good results elsewhere. Rock from many of the ledges, yields the gold readily, to the most simple process; while the highly sulphureted ores in which the district peculiarly abounds, require a different treatment. The recent success of the chlorination process gives new encouragement."

## Placer County.

A letter from Colfax to the *Placer Herald* says, March 5th: Surface diggings have recently been found near here which yield well, and may yet prove a big thing. Messrs. Walker, Johnson, Himes and Burkley own the mines. Sluicing has been going on several days. A new quartz mill is about to be erected, one mile west of town, to crush the rock of the Rising Sun, Montana, and other ledges.

## Plumas County.

From the *National* of March 12th: The miners around Silver Creek are doing well, and also at Eagle Gulch. Johnson & Bro., on Arkansas Ravine, have not as yet cleaned up. The same with Newt. Evans. John Akers, on Island diggings, has discovered a very rich deposit, and has commenced to bring in a ditch from Rock Creek. Morris Smith and Bro. on Reynolds' old diggings, are said to be making \$10 per day to the hand. Austin, on Slate Creek, is making wages. Squires Jacks and Brown have leased the Spanish Ranch ditch. Ed. Metcalf is making wages.

## Shasta County.

From the *Courier* of March 9th: We understand that Mr. Walsh has effected a sale of the Chicago claim to parties in San Francisco for \$35,000, the first instalment of which amount has already been paid.

A specimen as large as an egg and nearly pure gold, from French's claim, Churntown, was shown us the other day.

Kelly & Co.'s mill, now complete and in perfect working order, will commence a run on rock from the Jollie lode, at Muletown, on Monday next.

Mr. Hawley, of South Fork, has attached Conger's Little Devil Quartz Crusher to Ellsworth's mill, and engaged in prospecting rock from the Pacific. The indications are that it will yield as high as \$200 to the ton.

J. J. Bell informs us that an English company, of Swansea, Wales, has offered to lease the original Williams & Kellenger mine, at Copper City, paying a certain proportion of the receipts, for a certain number of years. It is probable the proposition will be accepted.

## Sierra County.

From the *Messenger* of February 23d: The new tunnel of the Good Hope company has reached the ledge, and exposes better rock than has been found before. If the storm ever ceases, the Slug Cañon Quartz mill will commence crushing some of the best rock found in the mine. The dump-house is already nearly filled.

Letter to same from Morristown: Last week the American company cleaned up three of their head boxes, and took out over five thousand dollars. This is only a partial clean-up, as their ground sluice is over seventy feet long, and was not run down.

Letter from Scales' Diggings: The mines are doing well, with prospects of bettering. Miles & Hughes, at Union Hill, Boyce Bros., at Fairplay, and Chesney & Co., at Council Hill, are all doing well.

From same of March 9th: The New Orleans claim at Little Grizzly is reported as paying handsomely, as high as eight or nine dollars per day to the hand.

Letter to same from Howland Flat: The Union company have suspended operations in consequence of a broken wheel. The Hawkeye have got very rich gravel and employ several hands. The Pittsburg is daily expecting to strike the nuggets as of yore. The Monumental have at length reached the goal of their most ardent hopes, and some of their gravel is pronounced equally as rich as any in the Pittsburg in her palmiest days.

## Siskiyou County.

Oro Fino correspondence of the *Yreka Union* has the following: The hydraulics have been in operation most of the winter, stripping the bedrock, which will soon be ready for the process of cleaning. We understand that San Francisco capitalists are investing capital in Indian Creek and Cottonwood diggings. We think they would do well to call and see us before they leave. The little valley immediately below the diggings, now being worked, is undoubtedly as rich mining ground as any in the county, and a few thousand dollars could be profitably invested in opening it. Considering all things, Oro Fino will compare favorably with any other mining camp in the county.

## Yuba County.

The Smartsville correspondence of the *Appeal* says, March 8th: The Andrew Jackson Quartz Mining company stopped work on the 4th instant. The incline shaft of this company is down some one hundred and five feet, and is a good piece of work. The Captain Bunker company has sunk a shaft ninety feet deep, and run a tunnel one hundred and fifty feet deep. They are thought to be twenty feet from the ledge. The shaft of the Mark Anthony is down 106 feet. It is a double shaft, and well timbered. They have got out about 2,000 tons of ore. The sulphurets are gold-bearing and rich. From some tests made in San Francisco by mill process, the company have had returns showing twenty dollars per ton in free gold. The Wauketan, near Sucker Flat, has a shaft forty feet deep, with an 8-foot ledge. The Blue Gravel company are in 560 feet in their new bedrock tunnel. The Blue Point company are using nitro-glycerine. The experiment is said to be a success.

At Strawberry Valley the Eagleville quartz ledge has been paying very well this winter, under the control of Said & Gashrie. They have struck a ledge in their lower tunnel nine feet and four inches in width, which is very rich all the way across.

At Camptonville, Hon. P. B. Hugg has finished his tunnel and will commence washing as soon as the weather will permit.

The *North Californian* says: The Blue Gravel, of Smartsville, made a clean-up last week of about half their flume, taking out \$32,000 more for the number of boxes than in any monthly washing hitherto.

## ARIZONA.

From the *Arizona Miner* of February 9th: About a week since it became known to a few of our people that a new discovery of gold placer and quartz mines had been made east of Silver Mountain, on Oak Creek, which drains the south side of Bradshaw Mountain, some sixty miles south of Prescott. \* \* \* The evidences of a rich and extensive mining region, heretofore unknown, to be called the Agua Fria District, are abundant. We hear but one opinion expressed.

It is reported that several New Yorkers, representing large capital, have recently arrived in this city, on their way to examine Arizona mines with a view to investment.

## IDAHO.

From the *Owyhee Avalanche* of March 2d: Developments on the Dushaway ledge are encouraging. Shaft is down seventy feet, and tunnel started south. Vein of good quartz is disclosed in the tunnel of over three feet in thickness. It assays richly. None has been milled, but will be, as soon as the road to the Shoenbar mill is passable. . . . The reports from the Woodstock ledge are flattering. Work is continuing, and the ore is showing richer. . . . Mr. Smith, who owned fifteen feet in the Hays & Ray ledge, recently made a sale of it in New York to P. F. Bradford, Esq., for \$4,360. . . . The Oro Fino and Morning Star Mining company expects to work its own mines the ensuing season.

Capt. E. D. Pierce has induced a company of about twenty-five men to go with him prospecting into the old hackneyed "Red Mountain" country—or west slope of the Goose Creek Range.

Work on the Poorman has commenced. . . . In our item on the result of some first-class Silver Cord ore we gave it as \$2,600 per ton, and it should have been \$26,000.

Letter to same from the Placer mines at Blue Gulch: The miners on Jacobs and Blue Gulches are putting their claims in thorough condition. There will be five hydraulics started as soon as winter comes. Jennings, Smith & Co., of the Bell claims, Wm. Denning & Co., A. Myers & Co., and J. H. Coaley & Co., will all be ready.

The channel leaves the gulch at the lower end of Myers' claims, and has been traced over half a mile in the mountain. R. Davidson & Co. sunk two shafts on their claims to the depth of forty feet, and got the best prospects I have seen for years. There is about twenty-five feet of good pay dirt in the shafts, with facilities for easy mining.

Prosperous times are promised in the Flint district. Greenwell & Co's mill is at work, and Black's mill will soon start. An assay of ores from the Sherman ledge gave \$4,869.75 of silver, and \$7.25 of gold, per ton.

The Lemhi excitement continues. A number of citizens have started, and others are making preparations. The news from that place is conflicting, though inclines favorably.

Letter from Leesboro (Lemhi) to the *Idaho World* says: "Nappias Creek prospects well for seven or eight miles, and some claims paid from eight to twenty dollars when worked last fall. One claim paid



\$500 for three men in one day's work. I helped Tom Wright to rock two half days. The first day we got \$20.87; the second, \$19. The mining claims are the size of those in Boise, and every man that discovers gold in a new creek, gulch, bar or hill, is entitled to a discovery claim. The ground needs no representation until June, when jumping will commence, as some men have as many as thirty claims, and it will be impossible for them to represent all. These mines are in the big bend of Salmon river, and there are six different districts, with some ground known to be rich on each of them.

From the *Leavenworth Journal* of Feb. 18th: About thirty miners are working on Gold Creek, a tributary of the Palouse, forty-five miles from Lewiston. The wages average from four to nine dollars per day. Only twenty inches of snow, water plenty, and not any very cold weather so far.

Same of 8th: Miners all busy on Salmon River. The high water had done some damage in carrying off wheels, but the prospects are generally good.

Letter from Grantsville to the *Montana Post*: Jackson & Co's ditch will be three and a half miles long, and is intended to convey water to work California bar, which the owners think a big thing.

In the Idaho district two new gulches have been struck, viz.: Missouri and Alabama, with eight cuts to the pan on the bedrock.

From the *Idaho World* of February 16th: The dripping of water into the tunnels in the Buena Vista Bar district is so troublesome that the work in them has been temporarily suspended. Along Moor's Creek, claim owners are making head dams and preparing in other ways for the volume of water which is sure to pour down when the breaking up of winter ensues. The prospects for the succeeding year, in mining about this whole Basin, are very gratifying. Big products are predicted by old miners.

From the *Times* of 22d: A shaft has been sunk to the depth of sixty feet below water level in the Juniata tunnel, and found a well defined ledge three and a half feet in width. Mr. Kelly, at the Illinois, has a ledge of four feet. The ore will average from fifty to one hundred dollars per ton. The Landon shaft is ninety-seven feet deep, where a good ledge is displayed two and a half feet width. The rock looks well.

#### MONTANA.

From the *Post* of February 9th: Bush & Co's mill, at the Lucas lode, in Summit district, will start up again in a few days. The company is engaged in sinking a new shaft on their lead.

Helena items: The Hendry mill in Grizzly Gulch has been rushing through the quartz during the past week, with a result that is far ahead of anything previously done. There was cleaned up from this mill on last Wednesday, from a six days' run on Union ore, the nice sum of \$5,100, in the best looking retort we have as yet seen in the Territory. The mill run eighteen stamps, and crushed some one hundred and fifty tons of rock.

#### COLORADO.

From the *Times* of February 19th: George Mitchell, manager of the Alps and North Star Companies, is now crushing some splendid ore (from the Illinois lode) in the twelve-stamp mill of the North Star Company.

S. P. Lathrop has commenced operations on the "Calhoun Lode," Alps Hill, Leavenworth District. Also Mr. McCaskell on the same lode. Geo. H. Sabin has just built a whim on the "Keystone." Robert Teats is starting up for the Lyon's Co., on the "Crawford." Mr. Whitcomb has started the "Indiana" in Nevada District.

In Russel District, Harry Granniss is at work on No. 5 east, Delaware lode. The shaft is about forty feet deep, and the crevice seven feet between walls. There is a streak of rich looking quartz and decomposed pyrites near one wall, and an exceedingly rich vein of galena near the other.

The Quartz Hill Tunnel Company are now in over 200 feet from the Gulch. Two lodges, at the depth of 50 and 100 feet from the surface, have been passed.

Mr. Fitzpatrick, manager for the Gunnell Company, cleaned up 252 ounces last week. Allowing \$20 currency to the ounce, the above netted \$5,040.00. The run by the Black Hawk Company is given at 248 ounces, and the Smith and Parmelec, 122 ounces. The Eagle Company retorted sixty ounces gold, worth about \$1,200. The total amount shipped this morning by the different hankers, was \$21,120.

In Eureka District, two mills are now running; in Nevada, five; Russel, three; Gregory, fourteen. In Empire District, Clear Creek County, five; Spanish Bar, two; Georgetown, two. Four or five mills are running in Boulder and Park counties.

#### NEVADA.

##### Black Rock.

From the *Susanville Sage* of Feb. 9th: Of all the experiments and tests yet made with Black Rock ore, none have been so successful as those made by Messrs. Ward, Bowman and Harrison, of this place. These gentlemen being largely interested in the mines, have for the past year devoted much time and study to the best mode of treating these ores. For the purpose of testing the matter fully, they rigged up a pan large enough to work eight or ten pounds at a time. From a number of latches of ore worked in this pan, taken from various lodges, they have obtained results varying from \$100 to \$1,200 per ton, but generally ranging from two to four hundred. Their experiments have satisfied them that these ores are not only rich, but among the easiest to work on the coast.

##### Esmeralda.

From the *Aurora Union* of Feb. 16th: We are informed that a ledge forty feet wide, rich in silver, gold and copper, has been found in a spur of the White Mountains, on the eastern side, and about twenty-five miles from Piper's ranch. Assays have been made of the ore which have given full satisfaction, and preparations are being made to test it more thoroughly. Considerable excitement was occasioned in this region by the discovery.

Same of 23d, contains a communication from one who had visited the Osceola mine, belonging to the Empire Company. This company is now idle for some reason which does not appear. The beautiful brick structure containing the reduction works of the company would be an ornament to any city in the Union. In the ore house adjoining the mill are some four or five hundred tons of fine quartz. This mine is worked by levels of eighty feet, each level with an opening from the surface on the slope of the mountain side. The depth attained by these levels is 330 feet below the croppings of the mountain. The writer speaks of the remarkable uniformity of the vein, and the abundant evidence of permanence.

##### Humboldt.

From the *Register* of Feb. 23d: Work on the American Basin Company's mine, in Star district, is being prosecuted with vigor, under T. G. Negus. Their tunnel is now in over 800 feet. Adjoining on the south is the Phoenix Company's claim, consisting of 1,800 feet on the same series of ledges. On this, work has been suspended for some time.

The Golconda mine, in Gold Run district, owned by White & Webb, continues to increase in richness and dimensions. They are now down eighty feet with their shaft, and have a vein of six feet of solid mineral, and have 300 tons of ore on the dump. The result of the working of this ore at Holt's mill is over \$100 to the ton.

Letter to same from Lima district: The Daniel Webster Company has a tunnel 437 feet in length, and is expecting daily to strike the main vein. This tunnel will tap the mine at a depth of 500 feet. He has out several stringers or feeders, containing very rich argentiferous galena. A shaft, eighty feet deep, shows a vein four feet wide the entire distance. The Montana, Sacramento, Bullion and Rochester are lying still, but work will be renewed in the spring. These are all very fine veins, measuring from four to twenty feet on the surface. The croppings by mill process have paid from thirty to seventy-four dollars to the ton. There has been most outrageous management in the working of all these claims, except the Rochester Company. Work on this mine has been necessarily suspended for a time, on account of an immense volume of water filling up the shaft to a depth of seventy feet. Pumping works are to be erected, and work resumed in the spring.

Same of March 2d: The Silver Star mine is improving in size, as well as in the rich quality of the ore as greater depth is attained.

E. J. Elzy, agent of the Monroe Company, now at the East, is sanguine of success in his efforts to raise a large working capital for the development of the mine.

Work is progressing satisfactorily on the Washington Series, Echo district. There is good reason to believe that during the coming summer the company will be ready to build a mill.

The center of attraction this week is at the newly discovered mines near Humboldt Lake, west of Parker's station. We received glowing accounts of these new mines, but too late for this issue.

The Almira, Yankee and American Basin Mining Companies, in Star district, are rushing their work day and night.

##### Pahranaagat.

From the *Salt Lake Vedette* of March 2d: A letter from Silver Cañon says:—"Times are improving. Claims are turning out better than was anticipated, and are being

worked briskly. Sebastopol is looking well; also Mary Ann and Nebraska. The New York, Philadelphia, Lansing, Mechanics and Norsell. Congar's mill has arrived and will be put up at Logan's Springs, two and a half miles from Vance's mills on the road to Los Angeles. A portion of Raymon's large mill is here; the other mill is doing well. Last week they took out 1,000 pounds of silver, yet the furnace does not work well, as the material is not suitable.

##### Reese River.

From the *Reveille* of February 19th:—On the Child and Canfield location, Silver Bend, an incline shaft has been sunk, near the north end, to the depth of 80 feet. Nine feet of the vein has been exposed. The southern incline is 505 feet from the northern incline, and is 105 feet deep. The vein is developed in the entire course of this excavation, and varies from five to six feet thick. Many large and beautiful specimens of ore have been extracted from this incline. One massive block measuring two feet long, two feet wide, and one foot thick, was presented to Col. Buel as a tribute to the Great Exposition. When these two inclines are connected by level, a magnificent body of ore will be developed—that is, the vein six feet thick will be uncovered to the depth of 100 feet and for the length of 505 feet. There are already 200 tons of ore on the dump that will certainly average \$150 per ton.

In Mammoth District, Messrs. Ferguson & Co. have continued their work on the shaft of the American Flag, which is now 130 feet deep. The owners are satisfied of the richness of their ledge, which contains nine feet of good pay ore. The Ural Company is still at work taking out ore. The Hamilton will commence operations during the coming season, having perfected their arrangements east. Work continues on the Sacramento, on which they are running to the southward and taking out good milling ore.

Important discoveries of mineral have been made in the Empire District, north of Hot Creek. The ore closely resembles that from the High-bridge.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of Feb. 21st:—The mines discovered last fall in the red hills in the vicinity of the Truckee, about which there was so much howling at the time, are said to have proven valueless. The leads are largo enough, but there is nothing in them.

It is reported that a very promising lead has lately been struck about two and a half miles southeast of Dayton. The lead is said to be about fifteen feet in width and rich in sulphurets of silver.

Same of March 1st:—The late snow storms have laid an effectual embargo on quartz teaming and reduction. Hardly a mill in the State is now at work. There is no trouble about the supply of ore. The dumps of all our mines are full and in many mines are large stores of ore not yet hoisted to the surface. In our mines work is still going on, though the force of workmen is not so large as during the prevalence of good weather, and good roads.

A silver lead was not long since discovered, some four miles south of Carson city, by Peter Riley, one of the first workers of the Comstock. It is fifteen feet wide, and the ore assays \$21.00 in silver with a small proportion of gold. A shaft has been sunk to the depth of ninety feet, but is stopped for the present by an excess of water. The ore is said to be a sort of coarse sandstone.

Same of 6th: Yesterday Mr. Welsh of the Gould & Curry mine, at the head of a volunteer shovel brigade of 200 men, took the field against the snow, and cleared the way from the mine to the mill, a distance of nearly five miles. Nothing now prevents the transportation of ore from the mine to the mill.

Same of 7th: Letter from Belmont thus speaks of the Silver Bend Company. They are now down to a depth of about seventy-five feet, and the ledge at this point is wider than where they run through at first, while the ore is better. I am informed by a reliable person that the poorest rock he could find in the whole pile, worked in a mortar \$200 to the ton. They have now about seventy tons in this pile. It is generally conceded that this is the best rock he has ever been taken out in this district. A twenty stamp mill will be erected in the spring.

Same of 8th: The work on the New Empire-Imperial Shaft is rapidly progressing toward completion. It has now attained a depth of 825 feet. It is intended to sink the shaft 75 feet deeper—making its total depth 900 feet—when a drift will be run

from its bottom to the east wall of the ledge, which is believed to be about 100 feet distant. As soon as the shaft has reached the depth intended and a drift has been run to the east wall, machinery will be erected and the new shaft will be used for raising rock and the old hoisting works abandoned.

From the *Trepass* of Feb. 25th: The Brunswick mill, on the Carson river, below Empire, is to be entirely rebuilt, and its capacity tested.

Same of 26th: The Birdsall & Carpenter mill, at Dayton, is running on ore from the Chollar-Potosi mine, and is making excellent returns. The Illinois mill is pounding away on Yellow Jacket, and producing the usual supply of silver bars. The Dayton mill is reducing ore from the Consolidated mine, at Gold Hill. Neither of these mills will cease work if the roads are in a passable condition to permit the transportation of ore from the mines.

The Bowers & Plato dump-pile is overflowing, and the hoisting of ore has ceased for the present.

Same of March 5th: At Washoe City, the ditch of the Savage Mining Company has been covered with snow and damaged considerably, but to what extent is not yet known. The Manhattan mill has been running nearly all the time, having had some 500 tons of Savage ore in reserve. The mills of the Savage Company are working tailings. The New York and Buckeye mills and also the Temelec mill, at Pleasant Valley, have suspended work.

Same of 6th: Following are the names of the mills in Gold Hill that still continue in operation: Rhode Island, Eclipse, Sapphire and Imperial. A number of others will commence work this week, and it is expected the whole stamp power will be in operation soon.

At the office of Wells, Fargo & Co., today, we saw sixty-two sacks of hullion corded up, awaiting transportation to San Francisco. In addition to the above, there are about 150 bars deposited in the banks.

We learn that a very rich body of ore was cut in the Mexican mine, Tuesday. The ore raised yesterday, it is said, will work \$1,000 to the ton.

**REFUSE MATTER VALUABLE.**—New York city pays twenty thousand dollars per year for the removal of 500,000 cart-loads of such matter. The value of this, as a fertilizer, would be two millions of dollars. They understand these things better at "the Hague." In that city pneumatic action is employed for the removal and saving of the refuse. In each house a vertical pipe extends from the basement to the roof, from which it emerges. This has openings at the level of each floor, closed, if need be, with air-tight lids. When these are unclosed, a strong current of air enters and passes up. This pipe continued into a street-pipe ending in the reservoir beneath the pave, of boiler-iron. Each house-pipe is closed by a valve where it joins the street-pipe. A powerful, steam-engine worked air-pump, at tended by an air-tight reservoir, travels the street. The former is attached to the subterranean reservoir, and evacuates the air from the upright house-pipe. Then a floor valve is suddenly opened. The pressure of the air having forced the refuse matter to each valve, when it is suddenly opened, the rush of air drives the mass thoroughly into the reservoir. As each valve is closed and the next opened, the steam-engine continues the air-evacuating process. Afterward the tender reservoir is tightly coupled to the other, and its contents are thrown into the first by pneumatic pressure. The street engine, with its load, then retires; its contents are shipped to the nearest station, and thence placed under the surface of the soil.

**CHANGE OF LOCALE BENEFICIAL TO TREES.**—An Eastern exchange says: "It is a singular fact that some trees make a more rapid growth, and flourish better in every way, in a country quite different from their own, than in their native country. Our most rapid growing deciduous and evergreen trees are foreigners, and in California, that land of remarkable trees, an *Eucalyptus* from Australia is found to excel in vigor any of the native trees, and will probably become the leading tree of the country. In Great Britain, the *Sequoia gigantea*, the California "Big Tree," which with us is at best uncertain, flourishes remarkably. Some statistics have been published by the Scottish Arboricultural Society, giving the height and age of this species, in different parts of the kingdom. Several at the age of five years are twelve feet high, others at seven years are eighteen feet, and trees ten years old are about twenty-one feet in height.



## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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**A Canvassing Agent** for the interior, is wanted at this office. None but a thorough and experienced man need apply.

## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

**Mr. E. W. Felton**, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1886.

**Mr. E. L. Smith**, is a duly authorized Agent for this paper, February 25, 1887.

## San Francisco:

Saturday Morning, March 16, 1887.

## Notices to Correspondents.

**W. P. R.**—Los Angeles. The most improved ice machines heretofore constructed, have consisted either of the employment of power as a condenser, and subsequently allowing the evolved caloric to escape; or more recently the evaporation of ammonia has been employed. Reports speak favorably of the latter method, and one was not long ago imported for the use of the college at Santa Clara, where it gives, as we have been informed, considerable satisfaction. There are two or three of the same class of machines in this city. They are quite small, however, having been constructed merely for experimental purposes. We do not know of any for sale. A machine to do the work you require, would cost from \$1,000 to \$1,200, without the engine to work it. We had prepared a lengthy article on the artificial production of ice for the present issue; but it has been unavoidably laid over until next week.

**SELENE.**—A volcano may exist in the moon without any necessity for an atmosphere being present; incandescence evolving intense heat and light, can be produced by many substances besides oxygen; though generally such substances are also gaseous. Many metals, however, and sulphur combine with incandescence and the evolution of light, at the melting point of the latter. The fact just stated forms one of the most pleasing and instructive experiments, illustrative of some of the phenomena connected with light and heat, and is performed as follows: Take two or three pinches of copper turnings or filings, and insert them along with about half their weight of flour of sulphur, in a small glass flask; after the above are well mixed, apply a lighted spirit lamp to the bottom of the flask. Very shortly, an intense incandescence will take place, the materials suddenly becoming red hot, a black brittle compound resulting—the disulphide of copper. It will thus be seen that the doubt thrown on the probability of an existing volcano in the moon (now thought to be apparent by some observers), by the *London Spectator* and other papers which have followed in its wake—is not countenanced, for the reason that it has usually been conceded that our satellite is without an atmosphere, and probably also devoid of water, our most familiar sources of oxygen. The illustration above given, is amply sufficient to show that incandescence and fusion, and development of light, similar to that of volcanic action, may be produced without the necessity of oxygen being present.

**A YOUNG MECHANIC.**—Friction is that resistance to motion which is principally caused by the adhesion which occurs between bodies of all kinds when in contact, and is more specially developed between solid bodies. As a general rule, friction is greater between similar kinds of matter, less between those of a different character. This is the reason why an iron axle moving in an iron socket experiences, under similar conditions, a greater amount of friction than if revolving in a brass socket. The interposition of substances like plum-bago or grease, the particles of which have very little cohesion, is a mode of reducing the amount of friction in machinery, which must be familiar to you.

## The Pacific Rolling Mills and Forge Company.

One of the most important enterprises connected with the industrial progress of this city, is that named at the head of this article. It is an enterprise which has long been needed, and those of our citizens who are engaged in other departments of industry connected with iron, and in mining and manufacturing operations, cannot but feel thankful to the enterprising gentlemen who have taken this matter in hand with an energy and zeal which augurs well for the future.

Iron manufacture lays at the foundation of all industrial pursuits; it constitutes the bed-rock upon which every other enterprise of human ingenuity and human industry rests. Without it, we could conduct neither mining, mercantile or manufacturing interests, or any considerable mechanical operations. It goes hand in hand with civilization, which, of itself, could not exist without it.

One of the earliest mechanical efforts on this coast, in 1849, while San Francisco was yet but little better than a small collection of tents, was the improvisation of a blacksmith shop and foundry, which was set up under a tent on the beach, by Peter and James Donahue, near where they afterwards built the present Union Foundry. From that time to the present, the iron manufacturing interest has gone on increasing from year to year, until it now numbers some forty machine shops and twelve foundries in this city alone, giving employment to over 1,000 hands, and directly or indirectly supporting not less than 4,000 people. The importation of pig iron in 1860 was but 2,439 tons. This importation has gradually increased, until it has reached 9,730 tons in 1866. The importation of wrought iron has kept equal pace with that of pig iron; but, owing to its being invoiced by packages instead of by weight, we are unable to give the exact amount.

The greatest drawback to the further and more profitable increase of the iron interests here, is the present dependence upon the East for the raw material of pig iron for the foundries, and of round and square iron for all the various manufacturing purposes of our machine shops. Our distance from the source of the raw material, and the uncertainty which constantly exists of the classes of iron *in transitu*, keeps prices in a constant state of demoralization; so that it is unsafe to make large contracts, or contracts at all, for any distant future delivery, beyond the capacity of the stock on hand.

The importer, in order to meet the demands of his customers, must keep heavy stocks in store, and even then often finds himself unable to deliver particular descriptions of iron, and much loss is often entailed, either upon the seller or buyer, by reason of the necessity of working unsuitable material, or such as works to waste, without any possibility of utilizing the waste, except by sending it 20,000 miles away, to be worked into desirable forms, and re-transported the same distance back again.

The Pacific Forge Company, which went into operation about a year ago, has partially remedied this evil, and has already saved large amounts to the State by the facilities which it has afforded for furnishing just the size of material needed, and for utilizing scraps which have heretofore been thrown away or sent to the East to be re-worked.

This company has recently been merged with the original Rolling Mill Company, and the united enterprise is now known as the "Pacific Rolling Mill and Forge Company." The company is now actively engaged in preparing its grounds and buildings upon Potrero Point, adjoining North's ship yard. The ground will be graded, and the building made ready to receive its machinery, by the first of August. The machinery is all purchased, and is now on its way to this port. The first shipment will be due

in April, and the balance will follow closely after.

The most modern and approved class of machinery has been purchased; such as will enable the company to make all sizes of iron, from  $\frac{1}{4}$ -inch to 24 inches, both round and square. Sizes of iron three to four inches will be rolled; all over that size will go under the hammer. Flats will be rolled up to nine and ten inches wide. The company will be prepared to forge shafts for steamships, and other like purposes, should occasion require, up to 36 inches—larger, even, than any now employed on the Panama steamers.

Machinery will be set up for making railroad iron from forty to fifty-six pounds. These rolls have been constructed with special reference to making such rails as are employed in the construction of the Pacific Railroad. They will also make street rails, rails for tramways, etc. Suitable machinery will be procured, at an early day, to roll boiler and other plate iron, for shipbuilding, etc. It is the intention of the company to keep fully up with the requirements of this coast in everything pertaining to heavy iron manufacture.

A puddling furnace will be put up as soon as it is found that such a furnace can be supplied with the raw material. Every encouragement will be given to the production of native iron.

The company will look for its present supply from such scraps as can be purchased on this coast, making up the deficiency by importing Norway, Sweden, English and Scotch blooms. Forging of all kinds, for steamship and mining purposes, for locomotive and car axles, are now being made at the company's temporary works, on Mission creek, near the San Jose Railroad machine and repair shops.

**MUNIFICENCE.**—George Peabody has given \$150,000 for the foundation and maintenance of a Museum and Professorship of American Archaeology and Ethnology, in connection with Harvard University. Also, the same amount for the foundation and support of a Museum of Natural History, especially of the Departments of Zoology, Geology and Mineralogy, in connection with Yale College. Also, \$500,000 to the Peabody Institute, established by him at Baltimore; making its present endowment one million dollars. He has also increased to \$250,000 his previous gift to the Peabody Institute, in his native town of Danvers, Mass. He has given \$25,000 to Phillips' Academy at Andover, Mass., and the same amount to Kenyon College, Ohio. Other gifts swell the amount to about two millions.

What a contrast between this princely giver, and those millionaires who hoard and hoard throughout a long life—content to be known only as the richest men of their day and generation—and finally pass off the stage, leaving wills to be quarrelled over by the trustees of benevolent institutions, and wealth to be squandered by fast young heirs! George Peabody gets the worth of his money. He is honored and blessed by thousands; and will be remembered when Astor is forgotten.

**STEEL MADE IN ONE DAY.**—Mr. Savage, of Meriden, Conn., has taken out a patent for the manufacture of steel by immersion in a chemical solution. A company is being organized in the above named place for carrying on the business. The process is claimed to have these advantages: First, it takes only one day, instead of fourteen; second, the steel is uniform in quality; third, there is for this reason no loss, consequently it can be made at a cheaper rate than by any other process.

**SCIENTIFIC TOYS.**—The latest is the "parlor steam-engine." Scented water is used; and while one studies the mechanism of the engine, he is regaled in the meantime with a most fragrant perfume.

## Desulphurization—Oliver's Process.

We have several times alluded to the fact that a person named Oliver has lately been selling, in Nevada and Placer counties, "receipts" for a "new process" for desulphurizing auriferous sulphurets. A late number of the Nevada *Gazette* says, that the process consists in mixing with the pulverised sulphurets a certain quantity of the following mixture:—94 parts of slacked lime and 6 parts of carbonate of soda. After roasting (the length of time not given) the mass is thrown into salt water, slightly acidulated with muriatic acid. The quantity of the mixture to the ton of sulphurets is not given.

We cannot see anything either new or valuable in the treatment. A better thing would be unslacked lime and nitrate of soda. Unslacked lime is better than slacked, because it will combine more readily with the sulphur, which must be its only value. Nitrate of soda is better than carbonate of soda, because the former contains double the quantity of oxygen which the latter does, and it moreover costs less than half as much. The only advantage of either consists in the readiness of their decomposition, to form with the sulphur, a sulphate of soda. In either case, as well as in cost, the nitrate possesses twice the value of the carbonate.

The lime will probably be disadvantageous in any shape, from the fact that when silicic acid is present, (as it always will be in large operations,) in the great heat necessary for throwing off the last equivalent of sulphur, it will form a silicate of lime which will coat the gold so as to prevent its amalgamation. Immersion in acidulated liquor, as is done in Oliver's process, will not remove the silicate. Trituration will with difficulty do it.

This is one of the disadvantages which often arises from roasting auriferous ores in open heaps. Whenever lime is present in the rock, the excessive heat in the central portion of the heap will be sure to form silicates, which will so enfil the gold as to render a thorough amalgamation almost impossible, except by long continued trituration.

Perhaps Oliver's process may work well in the laboratory, where the heat can be kept under control and the process carefully watched; but we believe that experience has hitherto shown that such processes (for they are not new) are not practical on a large scale, with or without modifications.

The saving of time and fuel will not be equivalent to the increased cost of the chemicals and the increased manipulation in their use. If the experience of any person should warrant a different conclusion, we should be happy to hear from him.

**A NEW PRESSURE BLOWER** for cupola furnaces, forges, rolling mills, ventilation, or for any purpose requiring a powerful blast, may be seen at Marsh, Pillsbury & Co.'s, corner of Front and Pine streets, who are agents for the same. It bids fair to supersede the piston and other blowers heretofore used. Being exceedingly simple in construction, it is said to be noiseless while in operation, and being protected from dust and dirt, is very desirable. Economy in point of power, strength of blast and other advantages, are claimed for it by B. F. Sturtevant, the manufacturer at Boston. We may have occasion to refer to it again.

**ANOTHER SCIENTIFIC MAN GONE.**—Dr. Livingstone, the African explorer, is reported by telegraph, to have been killed by the Kaffirs. He was a self-made and self-taught man. He has spent most of his life since 1840 in Africa. He was the first European who visited the great central lake Ngami; and after his return in 1849, from the expedition, was elected a member of the Royal Geographical Society, of London. No man has done so much to make us acquainted with Southern Africa. His loss will be deeply felt.



## The Labor Question—Co-operative Associations.

The labor question, which is causing a vast amount of uneasiness and bad feeling in this country, seems to be fast working out its own solution in England. Combinations for regulating the rate of wages, and fixing the hours of labor; and "strikes," which so frequently, and most generally, in fact, aggravate the very distress which they were intended to relieve, are there giving place to co-operation associations. The former are founded on a wrong principle, and from the very nature of things, are unwise and inefficient; nay, they often lead to criminality and disgrace. Not so with the latter. The co-operative association is wise, prudent, altogether loyal and effective. It is, in fact, the true remedy, always within the reach of the working man, by which he may effectually and fully protect himself against the combination of capital, in any and all of the phases, which cupidity may suggest, to control, either labor or the products of labor, at the expense of working men and consumers.

Co-operative association is now an institution, in England, and a power in the land. Its influence is felt and acknowledged by the most influential capitalists, even in a country so famous as England is for its "solid men." It reaches out its arms wherever moneyed oppression is felt, and lays a heavy hand upon the oppressor's head. Is there a combination to advance the prices of the necessities of life—a thousand or five thousand men combine, and with only a hundred dollars each, a fund is raised sufficient to go to other markets, if needs be, and supply the associated members at cost prices. Do the manufacturers of cotton, of woolen, of iron, or of any other of the products of labor, combine to put down wages and run up goods, so as to realize an unjust profit for capital over the wages of labor; the co-operators come in, build a cotton factory, or put in operation any other branch of business, furnish employment to the members of the association, paying them therefor the full earnings of their labor, minus a moderate charge for intelligent direction.

So successful have these associations become in England, that many of the large private establishments there are converting their individual operations into semi-co-operative associations—taking their workmen into quasi partnership; charging them a fair equivalent for the capital invested and superintendence of the same, and dividing with them all profits in excess. Many of these arrangements are found to work better for the proprietors than under the old system—the half profits, over interest, coming to the proprietors, being greater than the entire profits over the workmen, who had no pecuniary interest in their labor other than their stipulated wages.

An association of this kind is in existence in Rochdale—the home of Bright and the late Mr. Cobden—which numbers 5,500 members, with a capital of \$360,000. In all England there were reported, for last year, 417 such associations, whose paid up capital was a little short of \$4,000,000, but whose valuation of property was estimated at \$7,500,000, upon which a profit was divided for the year previous of not less than \$1,400,000!

Let the working men of America, and especially of California, ponder well these figures, and see if they cannot find in them a solution to the labor question which is just now creating so much feeling in this State. True, most of these associations in England are confined to buying and selling goods, but they are equally applicable to any business in which any one or more persons can engage.

Movements in this direction have been commenced in several of the Atlantic cities. A large iron establishment is about going into operation, or has already started, in Troy, N. Y. A cotton factory, with a capital of \$250,000, in shares of \$100 each, is about to be started in Fall River, Massachusetts. About half of the stock of this latter has been taken in small sums of \$200 and upwards.

There is no reason why many branches of business cannot be started in this State on the same principle. There will always be found capitalists in every community who will help along efforts of this kind undertaken by the masses. Thus has the laborer within his ready reach one of the most effi-

cient means for providing labor for the unemployed, and for securing a fair return of reward for the same. It is by far the best means of protection against the oppression of capital or the extortion of speculators. It is better than "strikes," better than "regulating" combinations. It runs counter to no law, human or divine. Let the working men of this State and of this city think of it. By a proper adoption of this plan, and a faithful carrying out of its conditions, they will not only provide themselves with present employment, but lay the foundations for future prosperity, and greatly aid in building up a healthy, prosperous and populous Empire of labor and capital on the Pacific slope.

**SOMETHING NEW IN THE PHOTOGRAPHIC ART.**—By our Eastern exchanges we observe that they are having a new sensation in the photographic art, by the adoption of a size and style of picture which seems destined to supplant the universal *carte de visite*. The October number of the Philadelphia *Photographer* (devoted exclusively to the photographic art) describes the size and advantages of the new picture in glowing terms, while the January number gives as an illustration a lady photographed from life in the new style. They are called the "Cabinet Photograph," and have albums, show cards, frames and envelopes, of a suitable size to receive them. They are already taken by our leading photographers in San Francisco in considerable numbers, and Mr. Shew, 612 Clay street, is devoting especial attention to them.

**STEEL RAILS.**—Their great durability is not the only advantages possessed by steel rails over iron ones. The interruption of the line consequent upon re-laying them, is not more than one-fifth that involved in the re-laying of iron rails. Again, they will bear much greater loads without breaking. When we speak of steel rails, we assume that they are made under a contract by which any bar, taken at random, must withstand the weight of a blow of one ton falling twenty-five feet, the rail being laid upon three feet supports. Steel rails may be taken up during a hard frost and bent double under a steam hammer without breaking, although steel that would stand this test without cracking would be somewhat softer than would be desirable. The test by a ton weight on 25-feet fall should be enforced under all contracts for steel rails. Any good steel rail will withstand it perfectly, while an iron rail would be broken with the same weight on a five feet or at most a ten feet fall. One thousand tons of Bessemer rails are now made weekly in England and Wales, and probably 400 tons on the continent. *Engineering* says: "We cannot doubt that the time will come when iron rails will be obsolete, just as the old cast iron trams, and after them the fish-bellied rail passed out of existence."

**WHEAT SOWING.**—We would call the attention of our readers, especially those interested in farming, to a communication by Prof. Rowlandson on the subject of "Wheat Sowing," which will be found in another column. As many of our readers are not aware of the high standing which the Professor holds in Europe, in the department of scientific agriculture, we would state that in addition to being the author of a number of well known treatises—from irrigation to lime, as connected with agriculture,—he has also obtained from the Royal Agricultural Society, of England, more prizes for essays than any other person. He has received eight prizes, while no other person has succeeded in obtaining a larger number than three.

**LEATHER FOR JAPAN.**—The beneficial effects of the opening up of trade with Japan is beginning to develop some quite unexpected benefits. It is stated that a ten thousand dollar order has already been received in this city for California leather from Yokohama.

A LONDON telegram, March 11th, says: Artemus Ward directed in his will that his property, after the death of his mother, shall go towards the erection of an asylum for printers.

## Steam Carriages on Common Roads.

BOISE CITY, I. T., Feb. 22, 1867.

**EDITORS MINING AND SCIENTIFIC PRESS:** In late issues of your paper, I noticed some remarks regarding "Steam Carriages for Common Roads." For the information of those who suppose this to be an entirely new invention, I would add my remembrances. About the year 1838 (I was a mere child). I well remember to have frequently seen, at St. John's wood, near London, England, a steam coach on the common roads. In appearance it somewhat resembled an "old fashion" stage coach. The inventor was Nathaniel Ogle, and the carriage was owned by him and Wm. Martin. With this machine, Mr. Ogle, accompanied by my father and aunt, and one or two other friends, made a successful trip from Southampton to Liverpool, a distance of over two hundred miles. The only accident of any importance on the trip was caused by the fracture of a brake; whereby the machine, in descending a steep hill, ran over a donkey cart, smashing the cart, killing the donkey, and badly scaring the man. Damages about \$40. Prejudice was the great cause of their non-success. I am your obedient servant, HERBERT W. O. MARGARY.

**TO FIX PENCIL WRITING.**—Pencil writing may be fixed almost as indelibly as ink, by passing the moistened tongue over it. Even breathing slowly over the lines, after writing, renders them much less liable to erasure than when not subjected to that process. This fact may be of importance to persons who may wish to carry a memorandum book for a long time. In ordinary use the pages of such a book often become very much defaced by the erasure and diffusion of the pencil marks, over the entire surface of the paper. A trial of the experiment will readily satisfy any person of the utility of the idea.

**NEW BARREL.**—At the meeting of the Polytechnic Association on January 24th, a barrel for holding coal oil was shown, made of twelve or fourteen successive layers of white oak strips laid over spirally around a mold, and held together with glue. It is tight, light and strong; and can be put into market at one-fourth the cost of any petroleum barrel now in use.

The three gold-bearing belts in the United States, are the "Appalachian Gold Field" (including Virginia and North Carolina), the "Rocky Mountain Gold Field," and the "Sierra Nevada Gold Field."

THE SUEZ CANAL is practically opened to commerce. Large steam tugs have already passed through, bearing the products of Asia into European waters.

**AN AGED SHIPBUILDER.**—Mason Barry, of North Swansea, Mass., now eighty-five years old, built 137 ships before he retired from active life. He was in the business forty-two years.

**CAOUTCHOUC** will, it is said, supersede gutta percha as an insulator for submarine telegraph wires. The latter gradually softens and decays.

**OCEAN TELEGRAPH CHARGE.**—Since the reduction of tariff on the Atlantic cable, on Nov. 1st, 1866, the receipts have been at the rate of \$1,400,000 per year.

**MAIL STEAMERS FOR THE SANDWICH ISLANDS.**—Mr. McRuer's bill provides for twelve round trips annually for ten years, at an annual subsidy of \$75,000.

**National Mineral Land Law, Instructions.** Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address DEWEY & Co., office Mining and Scientific Press, San Francisco.

**Builders' Insurance Company—**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
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FIRE AND MARINE INSURANCE. 10v145pqr

## A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*; or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v141f

## To Capitalists.

**GOLD QUARTZ MINE, SITUATED IN CALAVERAS COUNTY,** with steam mill fitted up with Amalgamating Pan, &c. FOR SALE. The mine has three main veins, and more than \$84,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 635 Clay street, San Francisco. 23v13-6m

## Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN engagement as a working Superintendent in the construction or operation of a Quartz Mill. Has had five years steady and successful experience in working ores in Washoe, and is practiced in saving sulphurets and the treatment of rebellious ores. Is prepared to furnish references for all the necessary qualifications of an intelligent, faithful and reliable quartz operator. Address F. M. SHAW, San Francisco, care Mining and Scientific Press. 10v14-3m

## Nitro-Glycerin!

WE ARE INFORMED THAT CERTAIN PERSONS ARE using, offering to manufacture and sell Nitro-Glycerin, to be used for Explosions in Oil Wells, blasting or other purposes.

This is to notify the public that the United States Blasting Oil Company is the sole owner of the Nobel Patent for manufacturing Nitro-Glycerin, and for exploding the same; and that any and all infringements of the Company's rights will be prosecuted in law.

The Company is now prepared to supply any desired quantity of the best quality of Nitro-Glycerin to the public, with instructions how to use it and avoid accidents. Orders to be addressed to JAMES DEVEAU, Secretary, 32 Pine street, New York.

**T. P. SHAFFNER,**  
President U. S. Blasting Oil Company.  
32 Pine street, New York.  
11v14-1m

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## Every Variety of Shafting,

Embracing ALL SIZES of Steamboat Shafts, Cranks, Piston Connecting Rods, Car and Locomotive Axles and Frames.

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**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spilled and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope; effecting a immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

**Round Wire Rope**—Iron or Steel, for Hoisting.

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**Soft Steel Wire Rope**—For Derrick Fall Ropes—

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**Galvanized or Ungalvanized Round Wire Rope**—For Ships' Rigging, Derrick Gays, Ferry Ropes, and all standing purposes.

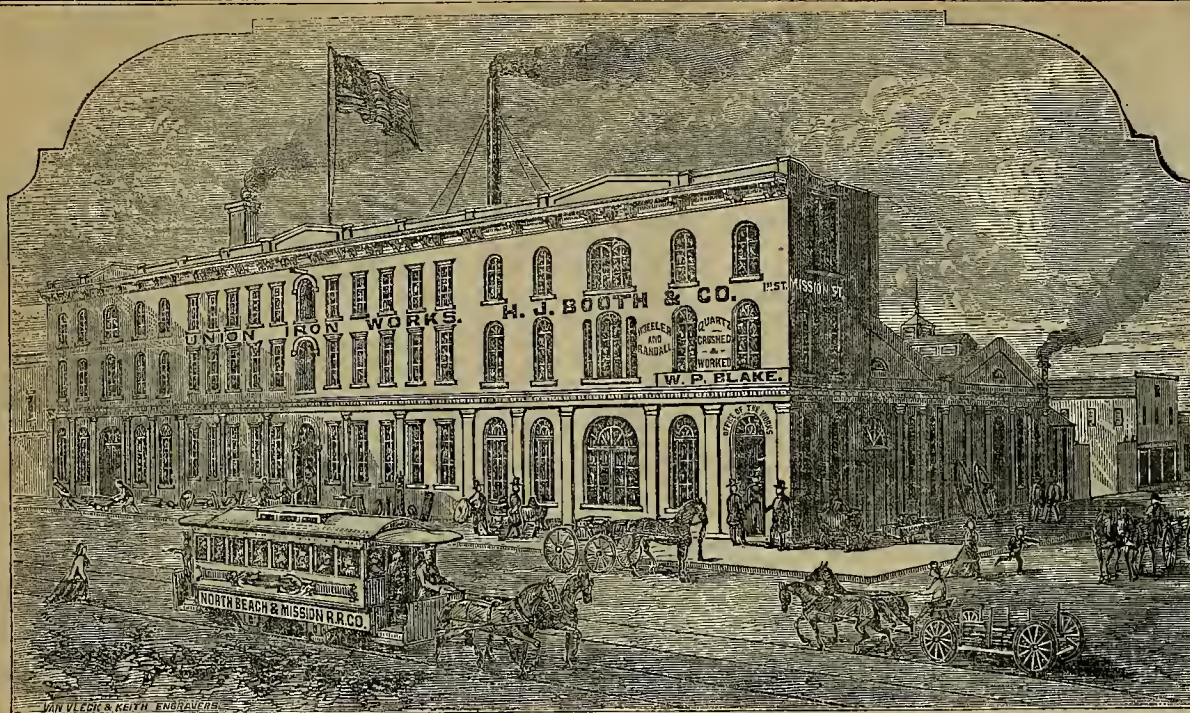
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**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. E. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

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**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

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**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screws, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

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**STEAM ENGINES AND QUARTZ MILLS**  
DUNBAR'S IMPROVED  
**Self-Adjusting Piston Packing,**

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**

Giving the greatest power, at lower cost, than any Wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Genual White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10ay-1f

**WILLAMETTE IRON WORKS,**  
**PORTLAND, OREGON.**

**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-1y One block north of Couch's Wharf.

**UNION IRON WORKS,**  
**Sacramento.**

**WILLIAMS, ROOT & NEILSON,**  
MANUFACTURERS OF

**STEAM ENGINES, BOILERS.**  
And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.  
**Dunbar's Patent Self-Adjusting Steam Piston**  
**PACKING,** for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**

No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 19v13-y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,

—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24v3-3

**SAN FRANCISCO**  
**Foundry and Machine Works,**

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—  
**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand: Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston Packing,** requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY, OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-1y **DEVORE, DINSMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**

**STOCKTON, CAL.**

**KEEP, BLAKE & CO.,**  
MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam**  
**Engines, Horse Powers,**

Mining and Irrigating Pumps. Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited and promptly executed.  
13v13-1y

**LEWIS COFFEY,** J. S. HEDDON  
**LEWIS COFFEY & HEDDON,**  
**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Machine establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**V. CUSHING, Agent**  
**For the Purchase and Shipping of Machinery**  
**OF ALL KINDS.**

SPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14-1f

J. O. HANSCOM, HANSKOM & CO., T. PENDERGAST,  
H. S. SMITH, W. W. HANSCOM.

**Etna Iron Works!**

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

Practical Machinists and Iron Founders,  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,  
Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else.

**Wheeler & Randall's New Grinder and**  
**Amalgamator,**

Which only needs examination to be appreciated.

**Tyler's Improved Water Wheel,**  
Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast**  
**White Iron Stamp Shoes and Dies.**

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited. 19v12

**FULTON**  
**Foundry and Iron Works.**

**HINCKLEY & CO.,**  
MANUFACTURERS OF

**STEAM ENGINES,**

**Quartz, Flour and Saw Mills,**

Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-4y

**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

**MARINE**  
**Locomotive,**  
And all kinds of  
**HIGH PRESSURE**  
**Steam Boilers**  
MADE.

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc.

Manufactured to Order.  
**Old Boilers Repaired**  
**D. CAMERON.**

6v12-1y

**SPONTANEOUS COMBUSTION OF LINSEED OIL AND SAWDUST.**—The following circular has been issued from the Ordnance Office: "Brevet Brigadier General Hagner having reported the occurrence of a well authenticated case of spontaneous combustion at Watervliet Arsenal, it is deemed of sufficient importance to communicate the attendant circumstances for the information of ordnance officers. This combustion resulted from the spreading of sawdust instead of sand, as was ordered, on some linseed oil which had leaked from a barrel. The sawdust, thus mixed with oil, ignited spontaneously in twelve hours in a cellar where it had been placed in a box, but was discovered, and extinguished by the fire engines without doing any damage. The temperature of the cellar was thirty-six degrees, indicating that spontaneous combustion in a mixture of linseed oil and sawdust, may occur at a low temperature.

**A PATENT LAW QUESTION.**—Judge Lott, of the New York Supreme Court, has decided that a manufacturer taking license from a patentee is subject to the rule *caveat emptor*, and cannot recover license fees or royalty paid by him on the ground of invalidity of patent, unless intentional fraud on the part of the patentee can be shown. The *Scientific American* thinks there is enough to be said on both sides to make it a nice question.

A COAL VEIN has, it is said, been discovered near Walla Walla.

**TOWNE & BACON,**  
**Book and Job Printers,**  
**Have the Largest Office,**  
**Do the most work,**  
**And do it better**  
**Than other offices**

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**

P. CLERC, E. KLEINCLAUS, W. DESBRIE.

**CLERC & CO.,**  
Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.  
9v14601

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 24v  
V. KINGWELL, [19v13-1y] J. H. WEED.

**JAMES MACKEN,**  
**COPPERSMITH.**

No. 226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to. 13v11

**JOHN LOCHHEAD'S**  
**Steam Engine Works,**

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 15v12-3m



**OUT OF THE WOODS.**—The Reese River Reville, of February 22d, thus jubilates: "Now is the winter of our discontent made glorious summer by the bright prospect dawning upon us! It is the coming summer of the great east, and the fruitful season will be perpetual. It is not alone upon our mines of silver and gold that we shall depend upon our prosperity, but also will be added to those great sources of wealth a vast area of agricultural and grazing lands, facilities for manufactures, adaptability of the country to railroad transportation, and the immense quantities of other minerals, as copper, iron, soda, salt, alum, sulphur, arsenic, etc., all of which will eventually add to our products and exports and give employment to a vast population. The superior order of our gold and silver veins is now become an established fact, and also that even our smallest veins can be made remunerative to well directed labor. Who, then, can make a calculation as to the brilliant future, or place a limit to our population and wealth? The amount of arable land in the great east far exceeds the general estimate founded upon the observations of passing travelers or the dust choked passengers by stage between this city and Virginia. The fine crops of grain and vegetables, the fat beef that graces our markets, and the well conditioned cattle of the many teams, attest the virtues of a much derided soil that has been too early condemned without a fair investigation. Agriculture upon the "deserts" of Nevada will become the second great interest of the State."

**BARRELS WITHOUT STAVES.**—Parties in New York have recently invented and put into operation the manufacture of barrels without staves. These barrels are made of ten or fifteen thicknesses of veneering, or scales, cut from any suitable timber. These run spirally across each other at right angles, and are fastened together with glue. The hoops are on the inside; the head slips down upon a hoop with which it forms half of a dovetail joint, and is secured by cement; the head and shell of the barrel previously having been turned in a lathe. These scales or veneers are cut by a machine which is said to cost less than \$1,000; and will cut from sixty thousand to seventy thousand a day; thirty of them are cut from an inch board, and any kind of timber will answer—pine, beech, spruce, etc. The cost is one-third less than a common barrel, and they can be made rapidly. These barrels have straight sides. It is claimed that they will hold petroleum and alcohol better than iron, and that they can be used for any purpose required of any other vessel. Specimens of this work have been exhibited before the American Institute, where they elicited much commendation.

**WATERVILLE COLLEGE**, in Maine, has changed its name, and hereafter is to be styled "Colby University," named after its greatest donor, Gardner Colby. A new building for a chapel, library and memorial hall is soon to be erected.

**To Owners of Copper Mines and Smelting Works.**

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for Smelting Copper. Address "W," care of Mining and Scientific Press. 5v14tr

**B. F. HOWLAND, PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

**Enamelled Cards, Ambrotypes and Sun Pictures**, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cartes de Visites only \$3 per dozen; Vignettes at \$4 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

**J. S. PHILLIPS, O. E. M.,**  
Mining Engineer of Cornwall,

WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or Superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations. Reference—B. W. Mudge, 523 Clay street, San Francisco. Humboldt City, Nevada. 6v14tr

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents. 2v12 F. L. WEGGANT, Proprietor.



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call special attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryant Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

**GODDARD & COMPANY.**

**ROWLAND, WALKER & CO.,**  
**GROCERS,**  
Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.  
Goods delivered at any point within the city limits.  
2v13-1y

**NEW YORK PRICES.**

**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry.  
2v10-6m

**WATCH REPAIRING AT NEW YORK PRICES.**

**NEW YORK PRICES.**

**REMINGTON'S ARMORY.**  
Agency, 310 Washington st., San Francisco.  
**PRICES REDUCED!**

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel. Rifle Cases—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Case. All the new models for sale very low.  
12v13tr  
**ALBERT E. CRANE.**

**Economy in Advertising.**—The MINING AND SCIENTIFIC PRESS is the best and most economical mining advertising medium in this city. Our terms are less than ONE HALF the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

**NATIONAL**  
**Insurance Company!**  
**OF SAN FRANCISCO.**  
Office, No. 408 Montgomery street,  
(Near California).

**MARINE INSURANCE.**—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.

**FIRE INSURANCE.**—Upon Buildings, Merchandise, Furniture, Rents, Vessels in Port and their Cargoes, and other Insurable Property.

Capital (Paid up) --- \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

**WILLIAM PIERCE,** President.  
**W. W. WIGGINS,** Secretary.

**D. W. C. THOMPSON,** Vice-President.  
**A. NOYES,** Marine Officer.

**EXECUTIVE COMMITTEE:**

**Albert Dibblee,** Chairman, **Joseph A. Donahue,**  
**E. G. Smith,** **John G. Bray,** 2v13-4m  
**Abram Black.**

**RADICAL CURE**  
—OF—  
**RUPTURE!**

Treatment of all Deformities of the Body, by DR. A. FOLLEAU's process, 624 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

**DR. A. FOLLEAU**

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
5v13-1y1lp

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
On Saturday, February 9, 1867,  
An Entirely New Style of

**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
5v14

Call and see them.

**Wanted!**

**\$10,000 FOR ONE YEAR, ON A VALUABLE**  
Ranch. Title perfect. A liberal per centage given. Apply at No. 410 Kearny Street, Room No. 2, any day, at 8 o'clock P. M. 8v14tr

**Baldness! Baldness!!**  
CAN BE PREVENTED, BY USING  
**Mayhew's Balsamic Hair Stimulant!**

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying this bottle. Prepared by

**W. E. MAYHEW, Druggist,**  
N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13-6w

**REPORT**  
—OF THE—  
**COMMITTEE**  
—ON—  
**SEWING MACHINES!**

California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

**FOR GENERAL FAMILY USE**

—THE—  
**"FLORENCE"**  
—IS—

**"THE BEST."**  
(Signed) **J. N. ANDREWS,**  
**THOMAS C. McHALE,**  
**L. ELKUS.**

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco.  
17v13

**GOVERNMENT HOUSE,**  
Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half the price required to pay at hotels.  
17v13-6m **SANBORN & CO.**

**Attention! Attention! Attention!**

**Look to Your Health in Time!**

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE** and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the artisan, the artisan, the laborer, the farmer, and the Merchant, pronounce it the greatest Remedy of the age.

Are you afflicted with Rheumatism? Use Healy's Rheumatic Liniment!  
Have you the Headache? Use Healy's Rheumatic Liniment!  
Have you a Sore Throat? Use Healy's Rheumatic Liniment!  
Have you the Toothache? Use Healy's Rheumatic Liniment!  
Are you subject to Cramps? Use Healy's Rheumatic Liniment!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. K. L." is stamped on the cork, and the face smile of FRANK HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and E. H. McDonald & Co., San Francisco, and at retail by all respectable Drug stores and Grocers. Price, \$1. 2v14-1-10p

**TIME & LABOR SAVED**  
BY USING

**STANDARD SOAP COMPANY'S**  
**WASHING POWDER,**

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleaning. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12q

**Blanks, Blank Mining Books,**  
**Constitution and By-Laws**  
—FOR—

**Mining and Prospecting**  
**Companies**

Elegantly printed, with care and dispatch, at the office of the **Mining and Scientific Press.**  
Orders from the Interior faithfully attended to.





OF MILWAUKIE.

OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1897, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Ass. Supt. C. P. R. R.  
9v14trfcl12p

## Professional Cards.

SHERMAN DAY,  
Mining Engineer,

No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
22q\*

## FREDERICK MANSELL.

Mechanical & Architectural Draughtsman,  
No. 423 California street, corner of Leidsdorff.

Drawings of Monuments made for parties applying for pa-  
ents at Washington or London. mar23-11.

GREGORY YALE,  
Attorney and Counsellor at Law,

No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

## JAMES M. TAYLOR,

Attorney and Counsellor at Law,  
COURT COMMISSIONER, appointed by the Fourth District  
Court, COMMISSIONER OF DEEDS for Nevada  
and Massachusetts.

## Court Block, San Francisco.

Entrances opposite City Hall, Merchant street, and 636  
Clay street. 1v14-11

## W. E. GOLDSMITH,

## Card and Seal Engraver,

505 Montgomery street, up-stairs, (over Tucker's.)  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 1v13-2q

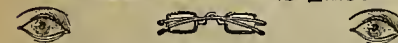
## GEORGE H. POWERS, M. D.,

Gives exclusive attention to

## Diseases of the Eye.

Office, southwest corner of Bush and Mont-  
gomery streets, Room 7 and 8. Office hours, 10½ to 12, and  
2 to 4 o'clock.  
References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and  
L. B. Benchley. 4v13-11

## Preserve Your Sight!



## C. MULLER, Optician,

205 Montgomery Street, - - Rusa Block,  
Invariably suits the Eyes by a proper selection of his  
Glasses. Price of Perfect Glasses, \$2.50 and upward.  
Sent pre-paid to any post office on the Coast. Applicants by  
mail will receive a circular containing directions, etc.  
Address, C. MULLER, Optician,  
2v14-11

## DR. H. AUSTIN,

## DENTIST,

No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 2v10-10y

## PHOTOGRAPHS

MADE BY

## MESSRS. CHALMERS &amp; WOLFE,

611 Clay Street, San Francisco,  
Are the best made in the city. An examination of their  
specimens before going elsewhere, will prove the truth of  
the above assertion. Prices—the lowest adopted by the  
Association of Artists. Remember the place, 611 Clay  
street. 11v13-5m

## DR. A. HARTMAN,

## Electro-Magnetic Physician,

CURES ALL CURABLE DISEASES, BY THE CON-  
centration of the vital forces. Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
made to walk, and the sick healed. Come and see the  
cured at the rooms. They will speak for themselves. The  
poor treated free from 10 to 11 A.M. and 1 to 5 P.M. Operating  
rooms, 410 Kearny street, between Pine and California.  
2v13-1m

## Metallurgy.

## Pacific Chemical Works.

FALKENAU & HANKS,  
Desire to call the attention of Druggists, Manufacturers,  
Metallurgists, Millmen, Assayers, Chemists and  
Students, to their

## ANALYTICAL LABORATORY,

And Establishment for the manufacture of Pure Re-agents,  
Pharmaceutical Preparations,  
And all CHEMICALS used in the Arts. They are prepared  
to make Chemical investigations,  
Analyses and Assays,  
Of every description, and to give advice upon all matters  
pertaining to Technical Chemistry.

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3v14-11 Center and Polson streets.

## BOALT &amp; STETEFELDT.

Metallurgists and Mining Engineers

## AUSTIN, NEVADA.

Western Branch of ADLERBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

## G. W. MAYNARD. J. H. TIEMANN.

## MAYNARD &amp; TIEMANN,

Mining Engineers and Metallurgists,  
210 Pearl street, New York,

## —AND—

## CENTRAL CITY, COLORADO.

## EUROPEAN

## METALLURGICAL WORKS,

—AND—

## Practical Mining School,

Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphuret, pyritous, and the so-called "rebel-  
lious ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, roasting by cupellation, done at moderate rates.

## PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting,  
refining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the business.

S. P. KIMBALL,

J. R. MURPHY.

## MOSHEIMER'S

## Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSTOOD HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.

Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurets.

## CONSULTATION OFFICE:

328 Montgomery street, San Francisco.

J. MOSHEIMER,

26v13-3m Engineer and Metallurgist.

## Pacific Mail Steamship Co's

## THROUGH LINE TO NEW YORK,

Carrying the United States Mail.

LEAVE FOLSOM STREET WHARF, AT 11

o'clock A. M. of the following dates, for  
PANAMA, connecting via Panama Railroad, with one of  
the Company's splendid steamers from ASPINWALL for  
NEW YORK.

On the 10th, 18th and 30th of each month that has

31 days.

On the 10th, 19th and 30th of each month that has

31 days.

When the 10th, 19th and 30th fall on Sunday, they will

leave on Saturday preceding; when the 18th falls on Sun-  
day, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at  
Manzanillo. All touch at Acapulco.

Departures of 19th or 19th connect with French Trans-  
Atlantic Co.'s steamer for St. Nazaire, and English steamer  
for South America.

Departure of the 30th connects with English steamer for  
Lima, the port of the new mines.

The following Steamships will be dispatched on dates as  
given below:

March 9th—SACRAMENTO..... Capt. J. M. Cavarly,

Connecting with HENRY CHAUNCEY, Capt. Gray.

March 19th—CONSTITUTION..... Capt. W. F. Lapidge,

Connecting with OCEAN QUEEN, Capt. Maury.

March 30th—GOLDEN AGE..... Capt. Jas. T. Watkins,

Connecting with the RISING STAR, Capt. Furber.

Cabin passengers berthed through. Baggage checked  
through—49 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attend-  
ance free.

These steamers will positively sail at 11 o'clock. Passen-  
gers are requested to have their baggage on board before 10  
o'clock.

Through Tickets for Liverpool by the Inman Line, can  
be obtained at office of P. & O. S. S. Co., San Francisco.

For Merchandise and Freight apply to Messrs. WELLS,  
FARGO & CO.

The splendid steamship COLORADO will be dis-  
patched on WEDNESDAY, April 5, 1897, for Hongkong, via  
Kangaw, carrying passengers, mails and freight.

For passage and all other information, apply at the Pa-  
cific Mail Steamship Co's office, corner of Sacramento and  
Leidsdorff streets.

OLIVER ELDRIDGE, Agent.

## Trades and Manufactures.

WM. BARTLING. HENRY KIMBALL.  
BARTLING & KIMBALL,  
BOOKBINDERS,  
Paper Rulers and Blank Book Manufacturers.  
505 Clay street, (southwest cor. Sansome),  
15v12-3m SAN FRANCISCO.

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(SUCCESSOR TO O. COAR)

## MARBLE WORKS,

No. 421 Fine st. bet. Montgomery and Kearny, San Francisco

Mantels, Monuments, Tombs, Plumbers' Slabs  
Etc., On hand and Manufactured to order.

Goods shipped to all parts of the State. Orders re-  
spectfully solicited. 5v8-3m

## NATHANIEL GRAY,

General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.

Barstow's Metallic Burial Caskets and Cases  
11v

## THEODORE KALLENBERG,

## Maker of Models for Inventors.

MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
LOSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Engraving Stamps. Repair-  
ing of machinery promptly attended to.  
No. 418 Market street, San Francisco. n7-11

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## ARTIFICIAL LEG,

Manufactured in Philadelphia, Penn.

## JARVIS JEWETT, AGENT.

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## HUCKS &amp; LAMBERT,

SOLE MANUFACTURERS OF THE CELEBRATED

## H. &amp; L.

## AXLE GREASE,

Natoma Street and North Beach,  
SAN FRANCISCO.

2v13-3m

## LEATHER HOSE AND BELTING,

ALL SIZES.

## SUCTION HOSE MADE TO ORDER

At short notice, by

## M. M. COOK &amp; SON,

No. 801 Battery street,  
SAN FRANCISCO.

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CARDS \$3  
Per 1,000  
—AND—  
Lower Rates  
—FOR—  
5,000.

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533 Clay street,  
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MONTGOMERY STREET.  
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## BILLS

—AND—  
Circulars  
NEATLY  
Printed  
—AT—  
Low Prices.

## J. M. STOCKMAN,

Manufacturer of

## PATTERNS AND MODELS,

(Over W. T. Garratt's Brass Foundry.)

S. E. Corner of Mission and Fremont sts.,  
6v14-11 SAN FRANCISCO

## WM. A. KOLLMYER,

## LOOKING-GLASS

—AND—

## PICTURE FRAME MAKER,

No. 41 Third street,  
Near corner of Jesse.

15v12-3m

## McNALLY &amp; HAWKINS,

## Plumbers and Gas-Fitters,

No. 645 Market street,

Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.

Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
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PACIFIC HYGIENIC HOME WATER CURE, at Fountain Farm,  
near Oakland. Chartered and conducted according to the  
teachings of the Hydropathic College of New York, by the  
Pacific Hygienic Home Association (Incorporated), B. J.  
SMITH, M. D., Consulting Physician; R. S. MACRETH, M. D.,  
Attending Physician; W. G. W. HANCOCK, Manager; H. AN-  
DREWS, Business Agent. Office, Baths and Lecture Hall,  
No. 627 Sacramento street, between Montgomery and  
Kearny streets. Free Lectures every Tuesday and Friday  
evenings. 16v13-11

## STOCK CERTIFICATES,

## STOCK TRANSFER JOURNALS,

## STOCK LEDGERS,

## ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Min-  
ing and other Corporations, kept on hand or printed to  
order on short notice, at moderate prices, at the office of  
the Mining and Scientific Press.

## RUGGLES' PRINTING PRESS.

## For Sale or Exchange.

The Proprietors of the Mining and Scientific Press have  
on hand a Half Medium Ruggles' Engine Job Press, in con-  
dition good as new, which will be sold cheap, or exchanged  
for a good Hand-Press of medium or large size.

## DEWEY &amp; CO., Job Printers,

Office, 505 Clay street.

IRON CASTINGS may be mended by mak-  
ing a mold of sand, which has an outlet  
about the ends of the broken portions, and  
pouring in melted iron, until the edges be-  
come fused. This is known by feeling with  
an iron rod. The outward flow of iron is  
then stopped, and it is allowed to fill the  
vacant space.

A MAMMOTH CIRCULAR SAW.—The em-  
ployees of the American Saw Company's  
works at Trenton, New Jersey, on New  
Year's day, were served with a dinner set  
out upon a saw twenty-two feet in circum-  
ference, made at that establishment for the  
Paris Exposition.

CUSHIONS FOR HORSE SHOES.—Horses  
used upon the Boston cobble-stone pave-  
ments, are now furnished with an India-  
rubber cushion placed between the shoe and  
the hoof.

A NEW OCEAN TELEGRAPH.—Senator Rum-  
sey, from the Post Office Committee, has  
reported favorably on the bill authorizing  
the Atlantic Telegraph Company of New  
York to make soundings and lay a cable  
from America to connect with France.

In making a butt joint in belting, use  
the punch and not the awl. The hole does  
not tear.

## SAN FRANCISCO ASSAYING

—AND—

## REFINING WORKS,

No. 410 Montgomery Street,  
Successors to KELLOGG, HEUSTON & CO.

## CAPITAL STOCK, \$1,000,000.

DIRECTORS:

JOHN PARROTT, CHAS. E. McLANE,  
WM. C. RALSTON, A. HAYWARD,  
LOUIS A. GARNETT, LOUIS A. GARNETT.

LOUIS A. GARNETT, President and Manager.  
JOHN HEUSTON, JR., Chemist and Supt.

THIS COMPANY, HAVING GREATLY ENLARGED  
their Refining Works, and introduced many other im-  
portant improvements, are pleased to announce that they  
feel warranted in again reducing materially their terms of  
doing business.

## The Tariff of Charges

Which they now submit to the public—considered with  
reference to the cost of material and labor—is lower than  
in any other part of the world, and secures to the mining  
interest of this coast an important increase in both the min-  
ing and commercial value of bullion. Their charges here-  
after will be as follows:

## For Assaying Deposits for Unparted Gold Bars.

One-eighth of one per cent. (herefore a quarter) for all  
amounts over \$1,000, and two dollars for any smaller sum.  
Returns made in twenty-four hours.

## For Assaying Deposits for Unparted Silver Bars.

Two dollars for the gold contained, up to \$1,000, and one-  
eighth of one per cent. for all amounts over that sum, and  
one per cent. on the silver contained. Returns made in  
twenty-four hours.

## For Refining Deposits made for Coin or Fine Bars.

On bullion under 300 parts gold, 2 cents per ounce.  
On bullion from 300½ to 600 parts gold, 4 cents per ounce.  
On bullion from 600½ to 750 parts gold, 6 cents per ounce.  
On bullion from 750½ to 919½ parts gold, 8 cents per ounce.  
Above 950, the only charge will be for coinage. But there  
will be no charge for refining less than two dollars.

## For Coining Gold.

This charge will be the same as at the Mint—a half of one  
per cent.—and which is paid by us to that institution. But  
there will be no charge in future for making fine gold  
silver bars from bullion refined by us.

## Returns in Coin made in Forty-eight Hours.

Silver contained in deposits for coin will be accounted for  
at the same rate customary at the Mint.

Gold bars of other Assayers in good standing, will be  
cashed by us at the highest market rates.

Dust and bullion can be forwarded to us from any part of  
the country, and returns made through Wells, Fargo & Co's  
Express.

## Charges at the U. S. Branch Mint.

For the convenience of those not familiar with the terms  
of the Mint, we subjoin the tariff of charges now in force at  
that institution:

For refining bullion under 300 parts gold, 3 cents per  
ounce.

For refining bullion from 300 1-2 to 600 parts gold, 5 cents  
per ounce.

For refining bullion from 600 1-2 to 750 parts gold, 7 cents  
per ounce.

For refining bullion from 750 1-2 to 919 parts gold, 11 cents  
per ounce.

For refining bullion from 919 1-2 to 999 parts gold, 14  
cents per ounce.

The charge for coinage is a half of one per cent., and the  
charge for making the silver bars, the same.

Comparing the net value of deposits for coinage, with the  
proceeds of unparted gold bars sold in the market—assum-  
ing that the bars have cost ½ of one per cent.—they must  
be sold at the following par rates to equal the return which  
would have been made had they been deposited for  
coinage.

330 par to equal Mint return, at refining charge of 14 cents.

345 par to equal Mint return, at refining charge of 11 cents.

365 par to equal San Francisco A. & R. Works return, at  
refining charge of 5 cents. 5v14-11



HENRY WARD BEECHER ON FAST HORSES. Mr. Beecher descants thus: "If a horse has had swiftness put into him, it is fair to give him a chance to develop his gifts. Of course there is reason in all things. Even in trotting, it is easier and pleasanter for some horses to go twelve miles an hour than for others to go three. They were made so. Does it hurt a swallow to go swifter than an ox? Why not? Because he was made so. It is easy to do the thing we were made to do easily. And a good horse was made to go fast. He does it, when wild, of his own accord. He does not lose the relish of speed even when domesticated. Take a fine fed horse, which in harness looks as if he were a pattern of moderation, a very deacon of sobriety, and turn him loose in pasture. Whew, what a change! He takes one or two steps slowly, just to be sure you have let go of him, and then with a squeal he flies by his heels in the air, till the sun flashes from his polished shoes; then off he goes, faster and fiercer, clear across the lot, till the fence brings him up. And then, his eye flashing, his mane lifted and swelling, his tail up like a king's scepter, he snorts defiance to you from afar; and with a series of rearings, running sideways and plungings, whiskings and whirrs, he starts again, with immense enjoyment, into another round of running. Do you not see it is more than fun? It is ecstasy. It is horse-rapture!

Engraved to Order.—Persons who desire to illustrate their individual estate—business, should give their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

DEWEY & CO.,  
Patent Agents, Publishers and Job Printers, 505 Clay st.

## New Mining Advertisements.

**Cosima Silver Mining Company, Cosima District,**  
State of Sonora, Mexico.  
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of March, 1887, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to Charles Mack, Secretary, at the office of this Company, 510 Battery street, opposite the Custom House, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventh day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, California.

**George Washington Gold and Silver Mining Company.—Location of Works:** Silver Mountain District, Alpine County, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of February, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Adams, C. P.	114	5	\$17 50
Arnold, B. W.	322	10	35 00
Bugs, A. G.	67	11	38 50
Bell, John.	38	5	17 50
Brayton, J. D.	325, 326, 10 ea	10	35 00
Bryant, J. G.	378, 381, 6 ea	10	35 00
Christianson, P.	115	15	52 50
Christianson, P.	176	10	35 00
Grigsby, E. F.	109, 296, 10 ea	10	35 00
Grigsby, E. H.	79	10	35 00
Grigsby, A. D.	100	10	35 00
Haskin, H. H.	94	5	17 50
McGeehan, Mrs. A.	240	10	35 00
Myer, James.	327	10	35 00
Phillips, W. L.	92	15	52 50
Riley, J. B.	329	4	14 00
Riley, J. B.	370	17 1/2	61 25
Shuttle, J. W.	173	14	49 50
Rutherford, John.	401	6	21 00
Whitton, M. S.	185, 187, 188, 189, 191, 192, 94, 194	120	420 00
Whitton, W. T.	214	10	35 00
Williams, Samuel.	83	30	105 00
Wilson, D. G.	275	20	70 00
York, John.	276	5	17 50

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of February, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the saleroom of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the first day of April, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. G. WOOL, Secretary.  
Office, 333 Montgomery street, San Francisco. feb 9

**North Star Gold and Silver Mining Company,**  
Reese River Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of March, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately to the Secretary, GEORGE H. FAULKNER, No. 423 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the fifteenth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEORGE H. FAULKNER, Secretary.  
Office, 423 Front street, San Francisco, Cal. mbl 6

**Santa Cruz Petroleum Oil Works Company,**  
Location: Santa Cruz County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the ninth day of March, 1887, an assessment (No. 19) of fifty (50) per share was levied upon the capital stock of said Company, payable immediately to the Secretary, GEORGE H. FAULKNER, No. 423 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirteenth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the thirteenth day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. WECENER, Secretary.  
Office, 415 Montgomery street, San Francisco, Cal. mbl 6

## Mining Notices--Continued.

**Big Blue Lead Gold and Silver Mining Company,**  
Cove District, Kern County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of February, 1887, an assessment of five dollars per share was levied upon the capital stock of said Company, payable March fourteenth, 1887, in United States gold and silver coin, to the Secretary, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-third day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. m1

**Chipton Mining Company—District of Cien,**  
Sonora, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the thirtieth day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Gautier, F.	10	30	\$150 00
Moshelmer, Jos.	55	25	125 00
Moshelmer, Jos.	57	25	125 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth (30th) day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, 404 Montgomery street, San Francisco, Cal., on Monday, the twenty-fifth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. m9

**Carmago Gold and Silver Mining Company,**  
Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of February, 1887, an assessment of twenty dollars per share was levied upon the capital stock of said Company, payable immediately in United States currency, to the Secretary, 402 Front street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. G. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. feb 16

**Cherokee Flat Blue Gravel Company, Cherokee**  
Flat, near Oroville, Butte County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of January, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mrs. N. Coburn	Not issued	2	\$10 00
Mrs. E. Clark	Not issued	3	15 00
E. H. West	23	3	15 00
Henry Poppe	15	7	35 00
Wells & Knight	Not issued	10	50 00
Ernest	Not issued	25	125 00
W. B. Rhodes	11	18	90 00
A. S. Randall	19	3	15 00
F. C. Heringer	Not issued	5	25 00
Mrs. M. A. Wells	Not issued	1	5 00
Edward Hunt	8	10	50 00
E. W. Smith	5	7	35 00
Mrs. S. Bryant	Not issued	1	5 00
Paul Locault	Not issued	2	10 00
L. Schmidt	Not issued	2	10 00
J. H. Harris	Not issued	5	25 00
J. P. Flint	Not issued	5	25 00
J. N. Sanford	Not issued	4	20 00
W. Buck	Not issued	4	20 00
G. A. Jones	Not issued	15	75 00
S. A. Stallman	Not issued	7	35 00
Mrs. A. S. Hartuck	Not issued	5	25 00
E. P. Flint	Not issued	5	25 00
T. B. Howard	Not issued	3	15 00
W. H. Hartuck	Not issued	5	25 00
J. T. Smith	Not issued	2	10 00
U. Michels	Not issued	9	45 00
G. W. Bell	Not issued	3	15 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at their saleroom, No. 327 Montgomery street, San Francisco, California, on the eighteenth day of March, 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. DE SENAILHAC, Secretary.  
Office, southeast corner of Jackson and Montgomery streets, (up stairs) San Francisco, Cal. m2

**Diamond Copper Mining Company. Location:**  
Rockland District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of February, 1887, an assessment of two dollars (\$2) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, J. A. COULIDY, Room 31, Montgomery Block, San Francisco, or to Ross B. RANDALL, the Company's Superintendent, at Crescent City, Del Norte County, California.

Any stock upon which said assessment shall remain unpaid on Saturday, the ninth day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. A. COULIDY, Secretary.  
Office, Room No. 31, Montgomery Block, corner of Montgomery and Washington streets, San Francisco, Cal. feb 9

**Emilia Mining Company, State of Guerrero,**  
Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1887, an assessment of seventy-five cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, Room No. 1, Grinn House, No. 623 Kearny street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.  
Office, Room No. 1, Grinn House, No. 623 Kearny street, San Francisco, Cal.

N. D.—The above assessment is levied in place of the assessment levied October 26th, 1885, which was revoked at a meeting of the Board of Trustees, held February 20th, 1887. All stockholders who have paid on the said assessment levied October 26th, 1885, will be credited the amount so paid on the assessment of February 20th, 1887. By order of the Board of Trustees.

MAX. BURKHARDT, Secretary.  
feb 23

**Great Central Mining Company.—Location of**  
Works. Yuma County, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first (1st) day of March, 1887, an assessment of one (\$1) dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the thirtieth day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. L. SQUIRE, Secretary.  
Office, No. 302 Montgomery street. m9

**Kancon Copper Mining Company. Location:**  
Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of March, 1887, an assessment of ten cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 609 Market street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fourth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. S. SWEET, Secretary.  
Office, No. 609 Market street, San Francisco, Cal. m9

**Hope Gravel Mining Company.—Location of**  
Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of February, 1887, an assessment (No. 13) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in gold coin of the United States, to the Secretary, at the office of the Company, No. 529 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on Wednesday, the third day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, corner of Leidesdorf street, San Francisco, Cal. m2-5w

**Keystone Mining Company. Location of Works:**  
Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1887, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, No. 449 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Monday, the twenty-ninth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. m9

**Mount Tenabo Silver Mining Company.—Lo-**  
cation of Works: Cortez District, Lander County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of February, 1887, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-first (21st) day of March, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eleventh day of April, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. feb 16

**San Marcial Silver Mining Company.—Loca-**  
tion of Works: San Marcial, District of Hermosillo, State of Sonora, Mexico.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, will be held on TUESDAY, the nineteenth day of March, 1887, at 7 1/2 o'clock P. M., of that day, at the office of the Company, No. 331 Montgomery street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. m2

**San Marcial Silver Mining Company.—Loca-**  
tion of Works: San Marcial, District of Hermosillo, State of Sonora, Mexico.

Notice.—There are delinquent, upon the following described stock on account of assessment levied on the thirtieth day of January, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brancham, Isaac	15, 16, 17, 18, 19	900	\$450 00
Brancham, Isaac	21, 22, 23, 100 ea	900	25 00
Brancham, Isaac	24	25	12 50
Brancham, Isaac	25	500	250 00
Brancham, Isaac	262	400	200 00
Harris, Ben. E.	228	77	38 50
Harris, Ben. E.	229	100	50 00
Harris, Ben. E.	231	300	150 00
Harris, Ben. E.	237	10	5 00
Harris, Ben. E.	244	10	5 00
White & Co. P. J.	383	900	450 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of January, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on the thirtieth day of March, 1887, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. m9

## Important to Secretaries.

Secretaries will please write proper names and figures distinctly, and hand in their advertisements as early in the week as possible, so that they may be published on the evening. Any information concerning the requirements of the laws regarding advertisements will be cheerfully given when solicited. Inspect all your notices carefully upon their appearance. In case of postponement give the earliest notice possible at the office. When copy is received sufficiently early, a proof-sheet will be furnished if desired. A revised copy rendered, for advertising notices, will be required. Send printed copies of advertisements, for serving individual notice to stockholders, printed at \$1 per hundred. Copies of the new advertising law, as officially published, furnished gratuitously. 227 Blank forms, for filling out Assessment Notices and Delinquent Sales, supplied free to advertisers in the Mining and Scientific Press on application at the office.

W. B. E. & CO., Publishers.  
405 Clay street, corner Sansome, San Francisco.

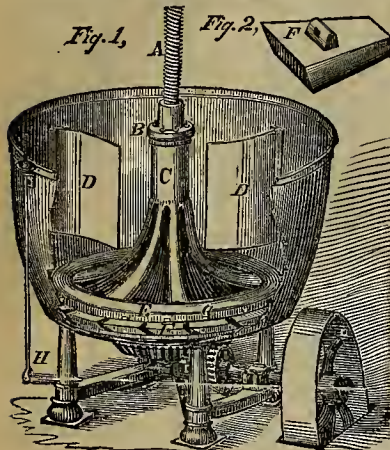
**Siskiyou Mining Company. Location of Works:**  
Middle Fork of Humboldt Creek, in the County of Siskiyou, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of December, 1886, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Ferd Wagner	210	10	\$50 00
Edw. Lybich	215	10	50 00
J. & C. Cale	68	25	125 00
J. S. Cale	84	25	125 00
C. A. Heimerling	212	1	5 00
William Mettel	27	50	50 00
Wm. B. Maxson	34	6	30 00
Charles Wood	167	50	250 00
Agnes Hewitt	2	1	5 00
Clementine Hoge	115	7	35 00
E. J. Pfeiffer	16	10	50 00
E. J. Pfeiffer	16	15	75 00
E. J. Pfeiffer	214	10	50 00
Louis Meier	34	5	25 00
Ellas Stetter	171	5	25 00
Ellas Stetter	196	2	10 00
Branscheid & Weber	107	25	125 00
Allen H. Clark	71	10	50 00
Frederick Wieland	83	5	25 00
Frank Dodge	85	5	25 00
George Burkhardt	29	3	15 00
George Burkhardt	36	3	15 00
John L. Lawton	205	2	10 00
J. D. Lawton	204	2	10 00
McWhitt Hale	121	11	55 00
John Wilson	124	10	50 00
U. L. Harvey	102	5	25 00
S. S. Kennedy	113	25	125 00
O. S. Bragg	123	3	15 00
Brodyvol & Co.	116	10	50 00
Daniel Turner	118	2	10 00
Robert A. Hunter	119	3	15 00
James Murphy	123	10	50 00
A. G. Holt	136	2	10 00
David N. Coey	162	5	25 00
David N. Coey	204	5	25 00
S. Van Buren	168	5	25 00
J. Van K. Hall	173	5	25 00
John S. Hill	169	20	100 00
John S. Hill	175	10	50 00
John S. Hill	225	10	50 00
O. E. Bigelow	192	5	25 00



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the action owing to the thinness of the cone, has a more direct effect in beating the pulp. E is the miller plate, F the Grinding Shoe, atached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years' experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 5v14d

HUNTER'S  
IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor,  
22v13-3m San Francisco.

VARNEY'S  
PATENT AMALGAMATOR.

## These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows: The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to this circumstance as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
PACIFIC FOUNDRY,  
1v1 San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,  
Beale Street, San Francisco,  
23v12 3mBRUCKNER'S  
Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

## The Mechanics' Institute.

Patented December, 1865.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

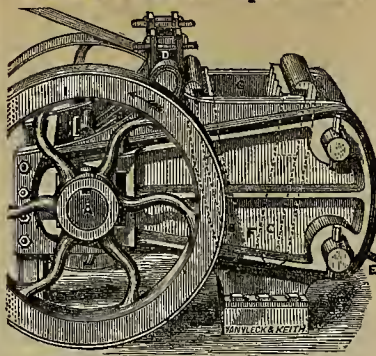
## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,  
19v12 416 Market street, San Francisco.

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms: No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600 No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....\$850 No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

## EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the thickness of the feed, which can be regulated at pleasure, so to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, G, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1865.

JAMES BAUME, Esq., San Francisco—My Dear Sir: I rejoice me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which it is entirely met in expectations; and I have not hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,

R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1865, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1865.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1865.

BRODIE & RADCLIFF, Express Building, 402 Montgomery street, San Francisco.

## Foundry for Sale.

A One-half Interest in the

## UNION IRON WORKS,

SACRAMENTO,

Owned by William B. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 35 feet front by 133 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address

WILLIAM B. WILLIAMS, 26v13f9-19p Sacramento, Cal.

Notice to Miners,  
Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG, 5v13-1y Stova Store, No. 125 Clay street, below Davis.

BLAKE'S QUARTZ BREAKER!  
PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,

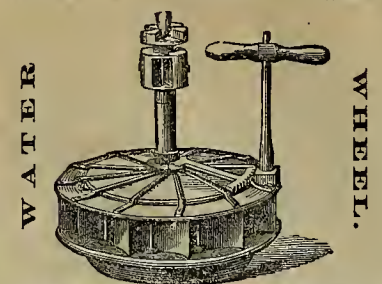
Corner First and Mission streets, or Box 2,077 3v13f SAN FRANCISCO.

## Brown's Filtering Heater!

FOR PREVENTING INCORUSTATION IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to

5v14-1y AUSTIN A. WELLS, Agent.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular to

KNAPP & GRANT, Agents for California, 25v13-1y 310 Washington street, San Francisco.

## To Quartz Miners and Others.

NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m JAMES HITCHENS.

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by 2v13 G. W. STRONG, Assayer.

STEAM HOISTING APPARATUS.  
A Handley 15-Horse Power  
PORTABLE ENGINE.

With V Friction Hoisting Gear, 4-foot Drum,

LATEST IMPROVEMENTS,

Has been used for a month,

For Sale Cheap!

On account of previous purchaser who suspended work

TREADWELL & CO.,

Corner Market and Fremont streets, San Francisco, 1v14-1m

NELSON & DOBLE,  
AGENTS FOR  
THOMAS FIRTH & SONS'  
CAST STEEL, FILES, etc.

SHEAR, SPRING, GERMAN,

## PLOW, BLISTER AND TOE CALK STEEL

MANUFACTURERS OF

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

319 and 321 Pine Street,

Between Montgomery and Sansome, San Francisco. 1v14-4r

## The Mercantile Gazette

—AND—

## PRICES CURRENT,

E. D. WATERS & CO., Prop'rs.

E. D. WATERS, Sec. T. F. CRONISE. J. H. CARMANT,

Office, Northeast corner Clay and Battery sts.,

SAN FRANCISCO.

The Mercantile Gazette and Prices Current" is the only

## Commercial Paper

## ON THE PACIFIC COAST.

PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

## THE LETTER SHEET PRICES CURRENT

For enclosure in letters, is also published every

13v13f STEAMER DAY.

## Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 60 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 534 Sacramento street, opposite What Cheer House, San Francisco. 1v14-1y

CEMENT MINING IN PLACER COUNTY  
A letter to the Auburn Stars and Stripes from Bath, three miles above Forest Hill, has the following:

It was supposed at one time that the well known "Dewey claim" at this place was "played out," and the interests were sold for a mere nominal price, changing about until they fell into the present owners' hands. These are now pushing ahead with sure prospects of a rich reward, taking out and crushing about one hundred tons per twenty-four hours, with twenty stamps. They have in fair view "pay matter" sufficient to keep their mill running for the next five years; and they have every reason to expect that the entire claim (300 feet in width by one mile in length) will pay equally well. Adjoining this claim on the south—now opened, and being worked with two mills, one of ten and the other of five stamps, are two more claims. The "pay matter" is taken out and delivered at the mill at a cost of about one dollar and a half per ton. It yields from five to eight dollars per ton, each stamp crushing about five tons per twenty-four hours. Another claim adjoining has recently changed hands in part, and will have a mill. No one can form any estimate of the value and extent of this rich deposit, but the vast amount of tunneling and drifting has settled the question beyond a doubt that this whole region for many miles in extent is one vast bed of gravel—geologically speaking, recent, as parts of trees of different dimensions are found in a semi-petrified state. It is also difficult to estimate the amount and extent of the tunneling; yet I think I may safely say, that within an area of six miles the tunnels—by lineal measure—(aside from drifts) and these were mostly in bedrock, would not fall far short of thirty miles in length, mostly run by poor men. The best pay is found in most instances near to and on the bedrock, and extending down into the latter from one to two feet.

A DECAYED MINING TOWN.—A correspondent of the Stockton Independent, says of Columbia, Tuolumne county: "Eight or nine years ago this was the queen of mountain towns. To-day, instead of thousands of miners swarming over the flats and through the gulches in the vicinity, almost total desertion meets the eye. A number of water-wheels, flumes, etc., still seem to be in active operation, as though striving on their own hook to keep a 'proper show of resistance' to decay. The city—for it still boasts of an incorporation—bears numerous evidences of what it has been in years past, in the way of stores, public buildings, and private residences, many of which are now vacant and being removed in order to give elbow-room to the miner. As the diggings about the city began to run out, and the bedrock offered little inducements to the heroes of the pick and shovel to proceed further in the bowels of the earth in search of the 'filthy lucre,' their operations extended into the suburbs, and generally with the most flattering results. Lot followed lot, and disappeared rapidly down the sluices, until the town is now limited to a narrow neck of earth, bounded on all sides by an array of sharp and rugged boulders laid bare by continual washing and scraping."

REMARKABLE GROWTH OF CABBAGE.—The Canadian Farmer, in copying an article from this paper, on the remarkable growth of cabbage in this State, in which it was stated that the stalk became so firm, as to permit of its being manufactured into canes, adds the following:

The same preternatural growth of the cabbage occurs in the island of Jersey, and other islands of the British Channel. The practice of manufacturing walking sticks from the stalks is there so common, that unlike the California phenomenon exhibited in New York, it attracts no special attention, except from the visitor and stranger. The writer had lately one of these curious canes in his own possession. During a winter's residence in the island of Jersey, he has often walked through a farmer's cabbage garden, between rows of these plants towering above his head. They are grown for the use of the small breed of cattle peculiar to the island, and known as the Alderney breed. The lower leaves are plucked for this purpose from time to time, and the stem, continuing to shoot up, carries with it as a sort of crown, a tolerably compact looking cabbage. They continue green and slowly growing throughout the mild winter of that climate.

THREE THOUSAND gallons of light wines per day, on an average, were imported into San Francisco during the year 1866.



NOT THE FAULT OF THE DAVY LAMP.—In Mr. Warrington Smyth's lecture on mining, it is stated that the vast majority of the mine explosions which take place, are due to the unscrewing of the cover of the Davy lamp by careless workmen, in order to get a better light. At the Oaks' colliery, where the recent explosion with such terrible loss of life occurred, the Stephenson lamp, called by miners the "Geordie," was used. These lamps were delivered to the workmen every morning, locked and secure. But it is believed that duplicate keys were procured by the miners, and that the lamps were occasionally opened by them, in order to light their pipes. Several of these keys were found upon the persons of the workmen after the explosion. The lecturer stated, however, that if a Davy lamp was tilted to one side, and left so until the wire gauze became red hot, there was no longer any degree of security with it.

#### Perry Davis' Vegetable Pain Killer.

The Great Family Medicine of the Age! Pain Killer, taken internally, should be adulterated with milk and water, and sweetened with sugar if desired, or made into a syrup with molasses. For a Cough, a few drops on sugar will be more effective than anything else. For Sore Throat, gargle the throat with a mixture of Pain Killer and water, and relief is immediate and the cure positive. It should not be forgotten that the Pain Killer is equally good to take internally, as to use externally. Each bottle is wrapped with full directions for its use. Please read the printed directions.

#### Allen's Lung Balsam

It is warranted to break up the most troublesome Cough in an incredibly short time. There is no remedy that can show more evidence of its merits, than this Balsam, for curing Consumption, Coughs, Colds, Asthma, Croup, etc. To Physicians—Physicians having consumptive patients and having failed to cure them by their own prescriptions, if they desire to try Allen's Lung Balsam, by writing to the proprietors they will send a formula which will enable them to judge whether the ingredients are of a superior compound or not. The medical properties are extracted by a chemical process. The apparatus by which some of them are extracted cost many thousands of dollars. Dr. H. P. Newman, Dentist, Office No. 132 West Sixth Street, (Inclined, stairs as follows: Gents—About one year ago I took a cold which settled on my lungs. A violent cough was the consequence, which increased with severity. I expectorated large quantities of phlegm and matter. During the last winter I became so much reduced that I was confined to my bed. The disease was attended with cold chills and night sweats. A diarrhea set in. My friends thought I was in the last stages of consumption, and could not possibly get well. I was recommended to try ALLEN'S LUNG BALSAM. The formula was shown to me, which induced me to give it a trial, and I will only add that my cough is entirely cured, and I am now able to attend to my business as usual. P. MEREDITH.

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Homeopathic Physician, No. 25 Montgomery st., opposite the Lick House, (Room 12, SAN FRANCISCO. Devotes special attention to CANCER, PARALYSIS and CHRONIC DISEASES. Consultation free. 18v156mir

#### JACOB SHEW,

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MUSEUM, Art Galleries, Conservatories and Zoological Grounds, On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

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To all parts of the Garden.....25 Cents, Children, under 12 years of age.....Half Price.

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These Gardens are accessible by the Howard, Folson and Market street Cars.

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One of the above steamers will leave for SAN FRANCISCO at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Steamships JAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego. Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE, President.

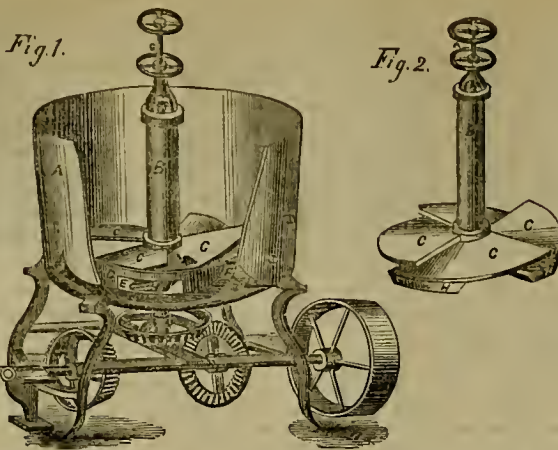
#### Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF THE SEXUAL SYSTEM AND REPRODUCTIVE ORGANS, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v134y

#### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr



#### Portable Steam Engines!

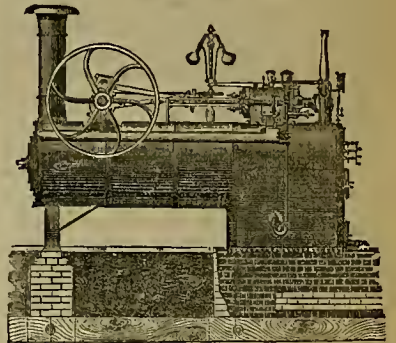
"Hoadley's" and "Hittinger's" Make,



HOADLEY'S.

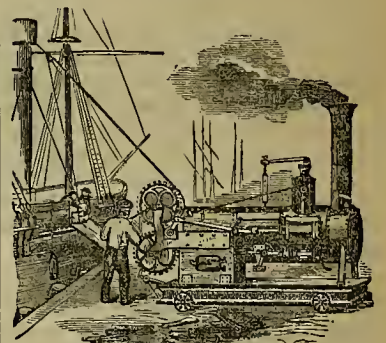
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

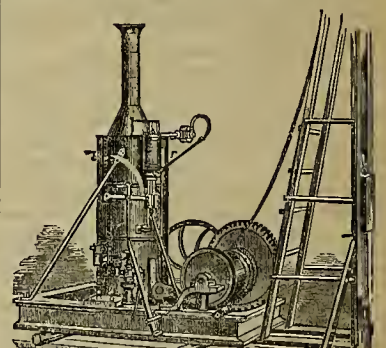
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price. These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world. All sizes on hand from 3 to 30 horse power, with an without carriages. Also, Portable Saw and Grist Mill's. For sale by TREADWELL & CO., 9v14-6m15p

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ELECTROTYPE CUTS, ENGRAVINGS, Etc.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.



**MECHANICS' INSTITUTE.**—The new officers of this association were duly installed on Monday evening last. The retiring President, H. J. Booth, was the subject of a complimentary resolution, thanking him for his donation of a marble mantel for the ladies' parlor, and his offer to subscribe \$100 towards paying the debt of the Institute, when any movement is made for that purpose. The committee on the Sutro Tunnel resolutions, asked for further time, which was granted. The committee whose duty it was to confer with the owners of the new market building, reported that the monthly rent at first demanded for it, in case it should be secured for fair purposes, was \$5,000, but was thought exorbitant, and the matter left undecided. A special meeting is to be held on Monday evening next, to consider the subject. It is believed that an arrangement can be made, which will be satisfactory to all parties.

**PACIFIC COAST BUSINESS DIRECTORY FOR 1867.**—We acknowledge the receipt, from the compiler, H. G. Langley, of a copy of this work. It is the first of the kind on this coast. It is exceedingly complete; giving as it does, not only the name and address of each merchant, manufacturer, and professional man in California, Oregon, Nevada, Washington, Idaho, Montana, Utah, and British Columbia,—and the names of all the counties, cities and towns therein,—but also, lists of the quartz mills,—with particulars in regard to them,—and multifarious statistics in reference to the Agricultural and mining resources of each of these States and Territories. It consists of 568 pages, besides 400 pages of advertisements; which latter portion of the book has its separate index. We shall give it a more extended notice, with extracts, in a future issue.

**MINING STATISTICS.**—The telegraph informs us that the item in the Appropriation bill which devotes \$15,000 to the collection of mining statistics, during the present year, was retained. It would appear from this, that Congress duly appreciated the preliminary report of J. Ross Browne, the Commissioner for that purpose. We have not yet received a copy of that report, but shall give it due notice when we do.

**INTERESTING TO MINERS.**—Are mining companies liable for damages caused by accident to their claims? A trial of such a case commenced on the 6th inst. at Marysville. A man was killed, some time since, in the mine of the Pennsylvania Company, at Brown's Valley, and the administrator of the deceased has commenced a suit against the company for \$10,000 damages. We have since learned that the plaintiff was non-suited.

**THE SAN FRANCISCO CORDAGE MANUFACTORY**—one of our oldest and most flourishing establishments—a full and detailed description of whose objects and workings appeared in our issue of April 8th, 1865, continues to turn out its usual amount of Manila cordage and rope. The products of this factory have been used at the Hayward and other mines, and wherever tried have given entire satisfaction.

**HUNTER'S NEW AMALGAMATOR**, which he calls the "Eureka Rubber and Amalgamator" appears to answer well the purpose for which it was designed. Mr. William Watt, of Grass Valley, writes as follows with regard to its performance:—"After a trial of two weeks of your Eureka rubber and amalgamator we have cleaned up, and found it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries; we run through it all the pulp that passed over the blankets from five stamps; the result is from rock that pays forty dollars per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I ever saw. It reduces the coarse particles of sand and makes the pulp more uniform in size, and it requires very little power to drive it. But the best recommendation I can give it is that I want four more. Will you please to go to the Vulcan Foundry and order them."

**NEW VEGETABLE FIBER.**—It has often been remarked that the stems of the *asclapias cornuti* (common milkweed) affords a very soft silky fiber, of great beauty and fineness, which might probably be utilized. It now appears from the *Canada Farmer* that Mr. Kirkwood, of Ottawa, Canada, has been for some time engaged in investigating this matter, and has produced a quantity of the material which he will send to the Paris Exhibition. If the results of his experiments realize his present anticipations, this hitherto despised plant will form the basis of a new industry.

Mr. Kirkwood believes the fiber to be well adapted to the manufacture of those articles in which silk is now employed. The plant is easily cultivated, and grows from three to four feet high. It is estimated that an average produce of 300 pounds per acre clean fiber, could be easily obtained, which, it is believed, could be worth about twenty cents per pound, which would amount to sixty dollars an acre. This new fiber has not yet been tested by an application to manufactures, although it is Mr. Kirkwood's intention to have it done in England. Mr. Kirkwood has been placed under obligations to Professor Hincks, of University College, Toronto, who has aided him in his investigations regarding the quality of this interesting vegetable fiber. We shall be curious to hear the result of the experiment of its manufacture in England.

**NITRO-GLYCERINE.**—We call attention to the caution notice in the advertising columns of our present issue, from the President of the U. S. Blasting Co. This article is apparently gaining favor as a blasting agent. We see that the Blue Point Company, at Sucker Flat, Yuba county, are successfully using it.

#### City Amusements.

**METROPOLITAN.**—Heller, the great magician, opened this week with his second budget of wonders. The attraction increases with each performance, so that it is difficult to secure seats. Notwithstanding the explanations given by the papers, Second Sight remains as much a mystery to the public as ever. The Goblin Drum is also very puzzling, although Mr. Heller takes great pains to explain it. The musical portion of the entertainment is alone worth the price of admission.

**OPERA HOUSE.**—At this house, "Our American Cousin" was produced on Monday night, and "Harvest Home" on Tuesday. Miss Kingsbury appeared on Thursday evening in "Pauvrete". The scene in which her cabin in the mountains is buried by an avalanche, is very effectively managed, and adds much to the interest of the play.

**ACADEMY OF MUSIC.**—Professor Siegrist had a complimentary benefit at this house on Friday evening, introducing, among other features, some of the celebrated Japanese tricks.

**WOODWARD'S GARDENS.**—The fine weather affords a good opportunity to spend a few hours at this attractive place, and should not be neglected.

#### Mineral Land Law Blanks FOR SALE.

We are prepared to furnish any of the following blanks used in securing patents for lands under the National Mineral Land Act of 1866:

- I. Applicants' Declaratory Statement.
  - II. Diagram, Description of Diagram and Boundaries, and Notice.
  - III. Register's Order for Publication—with Notice.
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  - V. Application for Survey Etc.
- Prices.—Single blanks, 10 cents; 75 ets per dozen; \$4 per hundred—postage paid.  
Pamphlet containing the Law and the Instructions of the General Land Commissioner, post paid, 25 cts. Address DEWEY & CO., Mining and Scientific Press, San Francisco.



#### CHICKERING & SONS' PIANO FORTES

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The only Perfect Pianos  
They lead in all valuable improvements—all others follow.  
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Commercial Education.

It is conducted upon actual business principles. The student, upon entering the College is furnished with a

Capital in Cash and Merchandise,

Rents a place of business, opens an account with the bank, insures his goods with the insurance office of the College, and enters upon the arena of business. He

Commences Speculation,

Carrying out all the details of trade—buying and selling goods, depositing in and checking from the bank, making and negotiating notes, drafts, bills of exchange, etc., recording the transactions and keeping the books in a regular and scientific manner. From this he advances to other capacities, until he finally takes his position in the

Union Business College Bank,

A regularly established institution, complete in all its appointments, and having a circulation of

One Million in College Currency.

This course saves from four to six weeks' time in copying useless manuscripts.

Penmanship.

PROF. F. SERENI, our Instructor in Penmanship, is well known to be a thorough and systematic teacher. And no College at present on this coast advertising to teach Penmanship, has ever taught the same by a regular, systematic plan, and we unhesitatingly declare, that for practical and systematic instruction in this branch, we challenge competition.

Telegraphing.

The large and increasing demand for good Telegraph Operators has induced us to organize a separate department or thorough instructions in this branch, and we are now enabled to present advantages in this line equal to any that can be afforded on the continent. Several instruments are in operation, and others will be added as occasion requires. So great is the demand for operators, that no young man, well qualified, need be wanting a situation. A skilful and accomplished operator has charge of the departments, and will devote his special attention to the advancement of the students under his charge.

There is no vacation, and students can enter upon any business day during the year. The public are invited to call and examine the various departments. Sessions day and evening.

For Circulars and further information, address  
JAMES VINSONHALER, President.  
10v14 1m

#### City College Laboratory,

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Practical and Analytical Chemistry and Metallurgy.

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PHARMACEUTICAL and TECHNICAL CHEMISTRY, such as is required by Medical and Pharmaceutical Students, will be taught to such students as may require it. Laboratory open every day, except Sundays, from 8 A. M. to 5 P. M.

Course of General Chemistry.

Lectures, illustrated with experiments, delivered every Friday afternoon during the College sessions, without extra charge, to the students in the Institution.

For further particulars, address  
REV. P. V. VEEDER  
Principal of the City College.  
Or, PROFESSOR THOMAS PRICE,  
6v12eow1f At 415 Montgomery street, San Francisco.

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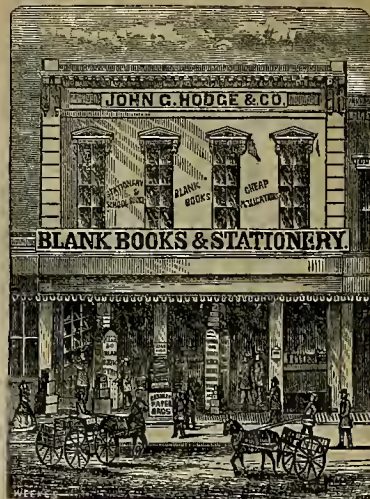
H. P. WAKELEE.....MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH Sulphuric, Nitric and Muriatic Acids of superior quality, in quantities to suit.

Orders will be received at the office only for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed.

9v14 3m

OLNEY & Co., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. no10



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TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liqueur, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Also and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles, &c.

HYDRAULIC PIPES AND NOZZLES

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Disillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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PATENT RIGHT OF HUNTS WINDMILL for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

E. O. HUNT,

28 SECOND STREET,  
11v14 San Francisco.



#### TO VICTIMS OF RHEUMATISM IN ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH this terrible and excruciating disease, that the means of a safe, speedy and permanent cure are within the reach of every sufferer, by using

#### RICHARDS' REMEDY!

For Inflammatory, Chronic, Hereditary and Mercurial Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all the modifications of the disease, whether confined to one portion of system or erratic in its character. Composed wholly of VEGETABLE EXTRACTS, it exterminates the complaint without injuring the constitution. None but the TORTURED SUFFERERS who have been relieved from their agony by the operation of this remedy, can realize the ecstasy which the mere cessation of long-continued torment imparts. Sleep returns, strength returns, health and hope return to the pain-worn and debilitated patient, and once cured, nothing but the grossest imprudence can lead to a relapse. The confidence with which these statements are made to the public, is the result of many years' observation and experience. The reputation of mere palliatives soon dies out, but that of a STEELING MEDICINE, which produces, year after year, in all cases, the same beneficial effects, NEVER DIES. This has been the history of Richards' Remedy. Try it!

For sale by H. BOWMAN, Druggist, Sacramento. And by Druggists generally. 11v15



# AND SCIENTIFIC Mining Press.

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And Patent Solicitors.

SAN FRANCISCO, SATURDAY, MARCH 23, 1867.

VOLUME XIV.  
Number 12.

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## A New Lubricating Oil.

We have examined at the manufactory of J. H. White & Co., No. 109 Commercial street, a new article of lubricating oil, manufactured by a process entirely new, from the crude petroleum of Santa Barbara. We have been permitted to examine the process minutely; but are not allowed to communicate the *modus operandi* to the public. We can merely state that the process is a mechanical one—which deprives the crude oil of all extraneous matter prejudicial to lubrication, without the use of the destructive distillation hitherto employed, and which, to a greater or less extent, destroys the body, and consequently the durability of the oil. Another important advantage which this possesses over the lubricating oils obtained by the ordinary process of distillation, is its entire freedom from foreign acids or alkalies, which, by the usual process, is found necessary to introduce into them in the process of manufacture. The destructive action of the small residue of acid which is always left in petroleum oils, from the refining process, is well known to machinists, and has hitherto been a decided bar against their very general introduction as a lubricating agent. The process of manufacture employed by Mr. White entirely removes this difficulty, as no acids whatever are used. This lubricating material is equal or superior to anything in use, and never "gums." On the contrary, it will soon cleanse machinery from gums left by the use of other oils. It has recently been introduced by a number of machine shops in this city, by the Oakland and Alameda ferry-boats and railroads, and by the California, Oregon and Mexican steamship lines, all of whom, we understand, pronounce it equal, if not superior to anything else of the kind in use. It is nearly or quite inodorous, and is pronounced the most durable and economical of any lubricating material in use.

The same firm also manufactures a superior quality of axle-grease, from the same material which the lubricating oil is derived from. It is prepared expressly for axles, car gearing and heavy journals, and is of a cooling nature. One of the most remarkable characteristics of this lubricating agent, is the fact, as stated, that when once upon the journals, it is of such tenacity that it will remain until entirely consumed. We would call especial attention to these lubricators as an entirely new process of manufacture; which must eventually form an important item in adding to the miscellaneous products of California, and as such, in connection with their intrinsic merits, they are well worthy of encouragement.

## A California Patent Boiler Feeder.

This feeder presents some new features which seem to commend it to the attention of engineers. It is claimed to effectually prevent the collection and deposition of sediment in the boiler from impure water.

The California Steam Navigation Co. has run boats 3,000 miles with tubular boilers, using this heater, without cleaning boilers, although the water contained as much mud as that of the Missouri river. The *Scientific American* gives the following description:

The case, A, Fig. 1, is of sheet iron or other suitable material, cylindrical, or in any other convenient form, closed at the ends by the heads, B and C, and having, at a short distance from the ends, transverse

which can be readily removed by injecting the water from the boiler through the pipe, M, and the nozzles, K.

This improvement was patented October 17, 1865, by William B. Cross, of Sacramento, California, who will furnish all necessary information.

ARRIVAL OF THE COLORADO.—This fine steamer, the pioneer in the trans-Pacific steam mail line connecting this coast with China and Japan—and whose departure on New Year's day was duly noticed by us, and duly celebrated by a grand banquet at the Occidental Hotel—returned safely to her wharf on the morning of the 20th inst. Nothing untoward occurred during the voyage; the trip was in every respect success-

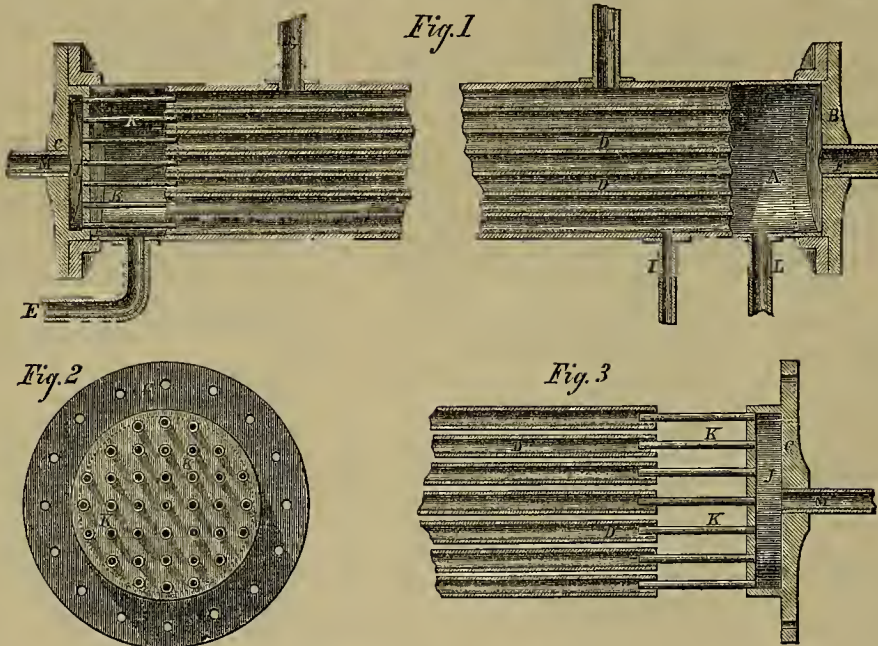
AGRICULTURE ON THE COLORADO.—Mr. W. W. Hardy, of Hardyville, Arizona, writes to Mr. C. A. Luke, of this city, that he has this season put in 150 acres of barley upon his ranch, which at the time of writing was looking most promisingly. Hardyville, it will be recollected, is about seven miles above Fort Mohave on the Colorado river. Other parties have put in large crops near Beaver Lake, opposite Fort Mohave, all of which also look well. The present appearance of these crops exceed all expectation. Mr. Forrest, of Hardyville, has started a large garden, in which he purposes to raise all kinds of vegetables, etc. Other parties in that place are also turning their attention to experimental agriculture, with flattering prospects of success. The reports

are particularly interesting and important from the fact that they are the first attempts of the kind which have been made in that portion of Arizona. The success of this enterprise will be a great advantage and relief to the miners on the Colorado, who have hitherto relied for their agricultural produce solely upon distant markets. We see no reason why Central Arizona, and those parts of the territory bordering upon the Colorado, should not be made as self-sustaining as almost any mining region on the Pacific coast.

THE LAKE CHAPALA STEAMERS.—The first of these steamers, now being built by Mr. Cameron, at the Neptune Iron Works of this city, has been completed, so far as the iron work is concerned, and been taken down for transportation to its place of destination. Two others are to be built. The completion of the first boat was made the occasion of quite a little gathering on Saturday last, when a large number of persons partook of a collation in the open hull of the steamer, as she lay upon the stocks. Señor Godey, Consul of the Republic of Mexico, was present, and made a short address on the prospects of the enterprise. We gave a full account of the construction of these steamers, and the enterprise connected therewith, in our issue of the 9th instant.

THE CALEDONIA MINING COMPANY filed its certificate of incorporation on the 20th of March. The object of this company is the working of the Caledonia and Union lodes, situated in Cherokee District, Plumas county, California. The capital stock is \$125,000, in five hundred shares, of \$250 each. Trustees: R. L. Ogden, H. C. Bidwell, and Frederick Ogden.

It is said that nitro-glycerine is now in continuous use on the Pacific Railroad, for blasting purposes.



CROSS'S PATENT BOILER FEEDER.

partitions, which support the ends of the tubes, D. The water to be heated enters the shell by the pipe, E, and passes through the tubes, entering the boiler by the pipe F. The exhaust steam enters at G, and leaves at H. The pipe, I, discharges the condensed steam in the form of water. The head, C, is provided with a chamber, J, from the inner plate of which small tubes or nozzles, K, project into the water tubes, D. The sediment which may gather in the water tubes is blown out and through the pipe, L, by steam admitted at will through the pipe, M, from the boiler. The water from the boiler being discharged through the nozzles, K, into the tubes, D, effectually washes them, thus preventing the collection of sediment in the boiler.

It will be seen that the exhaust steam traverses the length of the heater surrounding the water tubes, and thoroughly heats the water before its admission to the boiler. The gradual circulation of the water through the cluster of pipes favors the deposition of the sediment mechanically suspended in it,

fully accomplished, and the enterprise may now be said to be fairly inaugurated.

The outward passage to Yokohama, 5,250 miles, occupied twenty-two days. The ship ran down from that port to Hong Kong in five and a half days, making the quickest trip on record. Of the seventy-nine days consumed in the voyage, fifty-eight were spent at sea. The total distance run was about 14,000 miles. The Colorado brought 178 passengers. Among them are two commissioners from the Japanese Government, with their attendants, making in all a party of ten. They will proceed to Washington by next steamer. The vessel was, both at Yokohama and Hongkong, an object of great interest to all residents, English, American and native. Crowds visited her decks, and she was universally pronounced the finest vessel that had ever been seen in that part of the world.

RAIN-FALL.—Thirty inches of rain have fallen from the commencement of the rainy season up to the present time, one inch of which amount has fallen during the present month.



## List of Minerals and Ores Sent to the Paris Exhibition from California.

BY W. P. BLAKE, STATE COMMISSIONER.

NOTE.—The names of donors of specimens for the collection are given at the end of the paragraph. When not otherwise stated, the specimens are from the private collection of the Commissioner.

1. Bituminous Coal, Pittsburgh mine, Mt. Diablo, California.
2. Bituminous Coal, Independence and Eureka mine, (710 ft. deep) Mt. Diablo, Cal.; Greenwood & Newbauer.
3. Brown Coal, Cowlitz River, Oregon.
4. Bituminous Shale, Isthmus of Nicaragua, New Granada.
5. Native Sulphur, Tehama county, Cal.; R. G. Sneath.
6. Native Sulphur, Colusa county, Cal.
7. Sulphur, manufactured, Colusa county, Cal.
8. Native Sulphur, Cañada Larga, Santa Barbara county, Cal.
9. Rock Salt, native, in large crystals, Virgin River, Arizona; Winegar & Shaw.
10. Rock Salt, manufactured, Los Angeles county, Cal.; Winegar & Shaw.
11. Rock Salt, ground in water, Los Angeles county, Cal.; Winegar & Shaw.
12. Rock Salt, kiln dried, Los Angeles county, Cal.; Winegar & Shaw.
13. Salt from Salt Springs, Multnomah county, Oregon; H. C. Victor and F. A. Davis.
14. Cinnabar, New Idria, Fresno county, Cal.
15. Cinnabar, New Idria, Fresno county, Cal.
16. Cinnabar, New Idria, Fresno county, Cal.
17. Cinnabar, New Idria, Fresno county, Cal.
18. Red Oxide of Copper, Arizona Lode, Arizona.
19. Red Oxide and Native Copper, Arizona Lode, Arizona.
20. Red Oxide and Malachite, Camanche claim, near Prescott, Arizona.
21. Vitreous Copper Ore, Mineral Hill, Aubrey City, Arizona; J. F. Greenman.
22. Blue Silicate of Copper, Mineral Hill, Aubrey City, Arizona; J. F. Greenman.
23. Variegated Copper Ore, Del Norte county, Cal.
24. Copper Ore, Plumas county, Cal.
25. Yellow Copper Ore, Billy Rogers Lode, Cal.
26. Yellow Copper Ore, Last Chance mine, near Zinc House, Cal.
27. Native Copper, Del Norte county, Cal.
28. Yellow Copper Ore in slate, Keystone mine, Copperopolis, Cal.
29. Yellow Copper Ore, concentrated, Keystone mine, Copperopolis, Cal.
30. Yellow Copper Ore, Napoleon mine, Calaveras county, Cal.
31. Yellow Copper Ore, Newton mine, Amador county, Cal.; Cabinet State Agricultural Society.
32. Yellow Copper Ore, Cosmopolitan Lode, Genesee Valley, Plumas county, Cal.; Cabinet State Agricultural Society.
33. Copper Ore, Superior Copper Lode, Lights' Cañon, Plumas county, Cal.; Cabinet State Agricultural Society.
34. Copper Ore, Peacock Lode, Fresno county, Cal.; R. H. Rogers.
35. Vitreous Copper Ore, Mineral Point, Arizona.
36. Vitreous Copper Ore, Gem Lode, Arizona.
37. Copper Ore, Newton mine, Amador county, Cal.
38. Copper Ore, Newton mine, Amador county, Cal.
39. Cinnabar, with Carbonate of Lime, Hot Springs, Colusa county, Cal.; Cabinet State Agricultural Society.
40. Cinnabar, with Carbonate of Lime, Idaho.
41. Cinnabar, with Carbonate of Lime, Idaho.
42. Cinnabar, with Carbonate of Lime, Idaho.
43. Silver Ore (rich) Great Eastern Lode, Austin, Nevada; Shoshone Co.
44. Silver Ore (rich) Great Eastern Lode, Austin, Nev.; Shoshone Co.
45. Silver Ore (croppings) Great Eastern Lode, Austin, Nev.; Shoshone Co.
46. Silver Ore, Silver Sprout mine, Kearsarge District, Cal.
47. Silver Ore, Silver Sprout mine, Kearsarge District, Cal.
48. Silver Ore, Kearsarge mine, Kearsarge District, Cal.
49. Silver Ore, Kearsarge mine, Kearsarge District, Cal.
50. Argentiferous Galena, Kearsarge mine, Kearsarge District, Cal.
51. Silver Ore, Buena Vista claim, Inyo Mountains, Inyo county, Cal.
52. Silver Ore, San Rafael mine, Inyo Mountains, Inyo county, Cal.
53. Silver Ore, Magenta Lode, Macedonian District, San Bernardino county, Cal.; R. D'Heureuse.
54. Silver Ore with Galena, Chicago mine, Shasta county, Cal.
55. Silver Ore with Galena, Chicago mine, Shasta county, Cal.
56. Silver Ore with Galena, Chicago mine, Shasta county, Cal.
57. Silver Ore with Zincblende, Chicago mine, Shasta county, Cal.
58. Silver Ore, Diana claim, Blind Springs, Mono county, Cal.
59. Silver Ore, Rockingham claim, Blind Springs, Mono county, Cal.
60. Silver Ore, Josephine claim, Blind Springs, Mono county, Cal.
61. Silver Ore, Camanche claim, Blind Springs, Mono county, Cal.
62. Silver Ore (rich large mass) Camanche claim, Blind Springs, Mono county, Cal.; Dr. Harkness and Dr. Frey, Sacramento.
63. Argentiferous and Auriferous Copper Ore, Pahpah District, Nev.
64. Silver Ore (rich) Pootillo Series, Silver Peak or Red Mt. District, Nev.
65. Silver Ore, Antelope Lode, Esmeralda District, Nev.; Cabinet State Agricultural Society.
66. Silver Ore (very rich) Mexican mine, Virginia City, Nev.
67. Silver Ore, near La Paz, Arizona.
68. Silver Ore, near La Paz, Arizona.
69. Silver, Lead and Copper Ore, Eclipse Lode, Inyo Mts., Cal.
70. Silver, Lead and Copper Ore, Eclipse Lode, Inyo Mts., Cal.
71. Silver and Copper Ore, Green Monster Lode, Inyo Mts., Cal.
72. Silver and Copper Ore, Green Monster Lode, Inyo Mts., Cal.
73. Argentiferous Lead Ore, Stevens' Lode, Cosa District, Inyo Mts., Cal.
74. Argentiferous Lead Ore, St. Helena mine, Nev.; Sherman Day.
75. Argentiferous Lead Ore, Alvarez claim, Nev.; Sherman Day.
76. Argentiferous Lead Ore, Murphy claim, Nev.; Sherman Day.
77. Sulphuret of Antimony, Christmas Gift Lode, Telescope District, Cal.
78. Sulphuret of Antimony, Sierra county, near Downieville, Cal.; Crossman & Cochrane.
79. Cobalt and Nickel Ore (Danaite) Meadow Lake, Nevada county, Cal.; R. C. Gaskill.
80. Cobalt and Nickel Ore, Meadow Lake, Nevada county, Cal.; R. C. Gaskill.
81. Cobalt and Nickel Ore (Danaite) Meadow Lake, Nevada county, Cal.; R. C. Gaskill.
82. Lead and Zinc Ore, Williams and Kilinger, Shasta county, Cal.; Cabinet State Agricultural Society.
83. Lead Ore (Galena) Castle Dome District, Arizona.
84. Argentiferous Galena, Eclipse claim, Inyo Mts., Inyo county, Cal.
85. Galena, Yellow Copper, etc., Snav Valley, Nevada county, Cal.; Cabinet State Agricultural Society.
86. Gold Ore, Long Tom mine, Kern county, Cal.
87. Auriferous Quartz, Long Tom mine, Kern county, Cal.
88. Auriferous Quartz, Long Tom mine, Kern county, Cal.
89. Auriferous Quartz, Long Tom mine, Kern county, Cal.
90. Sulphurets, Long Tom mine, Kern county, Cal.
91. Gold Ore, Joe Walker Lode, Walker Basin, Kern county, Cal.
92. Gold Ore, Joe Walker Lode, Walker Basin, Kern county, Cal.
93. Gold Ore, Rochefort claim, Havilah, Kern county, Cal.
94. Gold Ore, Rochefort claim, Havilah, Kern county, Cal.
95. Gold Ore, French Friend claim, Havilah, Kern county, Cal.
96. Gold Ore, Mammoth Lode, Kern River, Kern county, Cal.
97. Gold Ore, Mammoth Lode, Kern River, Kern county, Cal.
98. Gold Ore, Mammoth Lode, Kern River, Kern county, Cal.
99. Gold Quartz, Pine Tree Vein, Mariposa Estate, Cal.
100. Gold Quartz, Pine Tree Vein, Mariposa Estate, Cal.
101. Gold bearing Quartz, Princeton Vein, Mariposa county, Cal.
102. Gold Quartz, App's mine, Tuolumne county, Cal.
103. Gold bearing Quartz, App's mine, Tuolumne county, Cal.
104. Gold bearing Quartz, Bacon mine, Tuolumne county, Cal.
105. Gold bearing Quartz, Chapparral Hill mine, Tuolumne county, Cal.
106. Gold bearing Quartz, Raw Hide Ranch, Tuolumne county, Cal.
107. Gold bearing Quartz, Monte Christo mine, Tuolumne county, Cal.
108. Gold bearing Quartz, Buchanan mine, Tuolumne county, Cal.
109. Gold bearing Quartz, Consuelo mine, Tuolumne county, Cal.
110. Gold bearing Quartz and Galena, Soulsby mine, Tuolumne county, Cal.
111. Gold bearing Sulphurets, Soulsby mine, Tuolumne county, Cal.
112. Auriferous Sulphurets, Gilson mine, Tuolumne county, Cal.
113. Gold bearing Quartz and Sulphurets, Coney mine, Amador county, Cal.
114. Gold bearing Quartz, Keystone mine, Amador county, Cal.
115. Gold bearing Quartz, Hayward's mine, Sutter county, Cal.
116. Gold bearing Quartz and Sulphurets, Volcano, Amador county, Cal.; Cabinet State Agricultural Society.
117. Gold Ore, Yellow Copper, etc., Golden Eagle mine, Volcano, Amador county, Cal.; Cabinet State Agricultural Society.
118. Gold Ore, Yellow Copper, etc., Golden Eagle mine, Volcano, Amador county, Cal.; Cabinet State Agricultural Society.
119. Gold in Quartz, Carson claim, Calaveras county, Cal.
120. Gold in Quartz, Carson claim, Calaveras county, Cal.
121. Gold in Quartz and Magnesite, Winter's mine, Angel's Camp, Calaveras county, Cal.
122. Native Gold in Quartz and Magnesite, Winter's mine, Angel's Camp, Calaveras county, Cal.; Dr. Hill.
123. Gold bearing Magnesite, Slocum, Bell & Co's claim, Angel's Camp, Calaveras county, Cal.
124. Gold bearing Rock, Cameron Gold mine, Angel's Camp, Calaveras county, Cal.; Peter Cameron, 1861.
125. Gold bearing Sulphurets, Angel's Camp, Calaveras county, Cal.; Slocum, Bell, and others, 1861.
126. Gold bearing Slate, South Carolina claim, Calaveras county, Cal.
127. Gold bearing Quartz, Davidson mine, El Dorado county, Cal.
128. Gold bearing Quartz, Davidson mine, El Dorado county, Cal.
129. Gold bearing Sulphurets, Golden Eagle mine, Amador county, Cal.; L. W. Coe.
130. Gold bearing Quartz, Montezuma Lode, El Dorado county, Cal.; Cabinet State Agricultural Society.
131. Gold bearing Quartz and Sulphurets, Capt. Mallet's mine, Placer county, Cal.
132. Gold bearing Quartz and Sulphurets, Capt. Mallet's mine, Placer county, Cal.
133. Gold bearing Quartz and Sulphurets, Lady Lincoln mine, Placer county, Cal.
134. Gold bearing Quartz and Sulphurets, Lady Lincoln mine, Placer county, Cal.
135. Gold and Silver bearing Quartz, Boulder Lode, Placer county, Cal.
136. Gold and Silver bearing Quartz, Boulder Lode, Placer county, Cal.
137. Gold and Silver bearing Quartz, Boulder Lode, Placer county, Cal.
138. Gold bearing Quartz, Mill Lode, Placer county, Cal.
139. Gold bearing Quartz, St. Lawrence mine, Placer county, Cal.
140. Gold bearing Quartz, St. Lawrence mine, Placer county, Cal.
141. Gold bearing Quartz, St. Lawrence mine, Placer county, Cal.
142. Gold bearing Quartz and Sulphurets, North Star Lode, Placer county, Cal.
143. Gold bearing Quartz, Mexican No. 1, Forbestown, Butte county, Cal.
144. Gold bearing Quartz, Mexican No. 1, Forbestown, Butte county, Cal.
145. Gold bearing Quartz, Mexican No. 1, Forbestown, Butte county, Cal.
146. Gold bearing Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
147. Gold bearing Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
148. Gold bearing Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
149. Gold bearing Quartz and Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
150. Gold bearing Quartz and Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
151. Gold bearing Quartz, decomposed, Mexican No. 2, Forbestown, Butte county, Cal.
152. Gold bearing Sulphurets and Quartz, Sulphuret Lode, Forbestown, Butte county, Cal.
153. Gold bearing Quartz, Shakspeare Lode, Forbestown, Butte county, Cal.
154. Gold bearing Quartz, Roberts' Lode, Forbestown, Butte county, Cal.
155. Gold bearing Sulphurets, Mexican No. 2, Forbestown, Butte county, Cal.
156. Gold bearing Sulphurets (clean) Mexican No. 1, Forbestown, Butte county, Cal.
157. Gold bearing Quartz, Jefferson mine, Brown's Valley, Yuba county, Cal.
158. Gold bearing Quartz, Jefferson mine, Brown's Valley, Yuba county, Cal.
159. Gold bearing Quartz, Jefferson mine, Brown's Valley, Yuba county, Cal.
160. Gold bearing Quartz, Jefferson mine, Brown's Valley, Yuba county, Cal.
161. Gold bearing Quartz, Jefferson mine, Brown's Valley, Yuba county, Cal.
162. Wall Rock, Jefferson mine, Brown's Valley, Yuba county, Cal.
163. Wall Rock, Jefferson mine, Brown's Valley, Yuba county, Cal.
164. Gold bearing Quartz, Pennsylvania mine, Brown's Valley, Yuba county, Cal.
165. Gold bearing Quartz, Pennsylvania mine, Brown's Valley, Yuba county, Cal.
166. Gold bearing Quartz, Pennsylvania mine, Brown's Valley, Yuba county, Cal.
167. Gold bearing Quartz, Sierra Buttes mine, Sierra county, Cal.
168. Gold bearing Quartz, Sierra Buttes mine, Sierra county, Cal.
169. Gold bearing Quartz, Sierra Buttes mine, Sierra county, (upper tunnel) Cal.
170. Gold bearing Quartz, Sierra Buttes mine, Sierra county, (upper tunnel) Cal.
171. Soft Quartz (lowest level) Sierra Buttes mine, Sierra county, Cal.
172. Gold bearing Quartz (lowest level) Sierra Buttes mine, Sierra county, Cal.
173. Gold bearing Quartz (rich) 3d level, Sierra Buttes mine, Sierra county, Cal.
174. Gold bearing Quartz, (rich) 3d level, Sierra Buttes mine, Sierra county, Cal.
175. Gold bearing Quartz, with Sulphurets, Rose Lode, Sierra Buttes mine, Sierra county, Cal.
176. Gold bearing Quartz (rich) Rose Lode, Sierra Buttes mine, Sierra county, Cal.
177. Gold bearing Quartz (rich) Rose Lode, Sierra Buttes mine, Sierra county, Cal.
178. Gold bearing Quartz (rich) Rose Lode, Sierra Buttes mine, Sierra county, Cal.
179. Gold bearing Quartz (tunnel No. 2) Rose Lode, Sierra Buttes mine, Sierra county, Cal.
180. Gold bearing Quartz, (rich) tunnel No. 2, Rose Lode, Sierra Buttes mine, Sierra county, Cal.
181. Gold bearing Quartz, Rose Lode, Sierra Buttes mine, Sierra county, Cal.
182. Gold bearing Quartz (tunnel No. 3) Ariel Lode, Sierra Buttes mine, Sierra county, Cal.
183. Gold bearing Quartz (very rich, tunnel No. 3), Ariel Lode, Sierra Buttes mine, Sierra county, Cal.
184. Soft Gold Quartz, Ariel Lode, Sierra Buttes mine, Cal.
185. Green Rock, from the vein, Sierra Buttes mine, Sierra county, Cal.
186. Clean Sulphurets, from the tailings, Sierra Buttes mine, Sierra county, Cal.
187. Gold bearing Quartz, Independence Gold mine, Sierra county, Cal.
188. Gold bearing Quartz, Independence Gold mine, Sierra county, Cal.
189. Gold bearing Quartz, Independence Gold mine, Sierra county, Cal.
190. Tailings (average) Sierra Buttes mine, Sierra county, Cal.
191. Gold Quartz (very rich) Barnhardt claim, near Sierra Buttes claim, Sierra county, Cal.
192. Auriferous Galena in Quartz, Primrose mine, Sierra county, Cal.; Crossman & Cochrane, Downieville.
193. Gold in Quartz, Primrose mine, Hog Cañon, Sierra county, Cal.; Crossman & Cochrane.
194. Gold bearing Quartz, Primrose mine, Sierra county, Cal.; Crossman & Cochrane.
195. Gold in Quartz, Primrose mine, Sierra county, Cal.; Crossman & Cochrane.
196. Gold bearing Quartz, Belzona mine, Ladies' Cañon, Sierra county, Cal.; Crossman & Cochrane.
197. Gold bearing Quartz, Four Hills, Sierra county, Cal.; Crossman & Cochrane.
198. Gold bearing Quartz, Four Hills, Sierra county, Cal.; Crossman & Cochrane.



199. Sulphuret of Molybdenum in Quartz, Sierra county, Cal.; Crossman & Cochrane.
200. Gold bearing Arsenical Pyrites, Fac Similo mine, Sierra county Cal.; Crossman & Cochrane.
201. Gold bearing Sulphurets (decomposed) near Sierra Buttes, Sierra county, Cal.; Crossman & Cochrane.
202. Sulphurets, Mexican mine, Downieville, Sierra county, Cal.; Crossman & Cochrane.
203. Yellow Copper Ore, Sierra county, Cal.; Crossman & Cochrane.
204. Sulphuret of Iron with Gold, Harpending mine, Placer county, Cal.
205. Sulphuret of Iron in Slate, Harpending mine, Placer county, Cal.
206. Soft Slate (auriferous) Harpending mine, Placer county, Cal.
207. Soft Slate (auriferous) Harpending mine, Placer county, Cal.
208. Soft Slate (auriferous) Harpending mine, Placer county, Cal.
209. Soft Slate (auriferous) Harpending mine, Placer county, Cal.
210. Soft Slate (ochery) Harpending mine, Placer county, Cal.
211. Gold bearing Sulphurets, Seaton mine, Amador county, Cal.
212. Gold bearing Quartz, Moss Lode, Arizona.
213. Gold bearing Quartz (rich) Vulture Lode, Arizona.
- 214 to 219 inclusive, Borax Crystals, from Borax Lake, Lake county, Cal.; California Borax Co.
220. Mud, containing large Crystals of Borax, Borax Lake, Lake county, Cal.; California Borax Co.
221. Mud containing small Crystals of Borax, Borax Lake, Lake county, Cal.; California Borax Co.
222. Borax, small Crystals (washed) Borax Lake, Lake county, Cal.; California Borax Co.
223. Mud of Borax Lake (dry) Borax Lake, Lake county, Cal.; California Borax Co.
224. Incrustation from Lake-bed Borax Lake, Lake county, Cal.; California Borax Company.
225. Crude Boracic Acid, Lake county, Cal.; California Borax Co.
226. Borax Refined, Borax Lake, Lake county, Cal.; California Borax Co.
227. Magnetic Iron Ore, San Saba, Sierra county, Cal.; Crossman & Cochrane, Downieville.
228. Magnetic Iron Ore, San Saba, Sierra county, Cal.; Crossman & Cochrane.
229. Magnetic Iron Ore, Sierra county, Cal.; Cabinet State Agricultural Society.
230. Iron Ore, Yankee Hill, Butte county, Cal.; Cabinet State Agricultural Society.
231. Iron Ore, Butte county, Cal.; A. James.
232. Magnetic Iron Ore, Butte county, Cal.; A. James.
233. Chromo Iron Ore, Forbestown, Butte county, Cal.
234. Oxide Manganese, Red Island, San Francisco Bay, Cal.
235. Oxide Manganese, Red Island, San Francisco Bay, Cal.
236. Oxide Manganese with Chert, Red Island, San Francisco Bay, Cal.
237. Oxide of Manganese, Red Island, San Francisco Bay, Cal.
238. Copper Ore, Planet mine, Arizona; Richard Ryland.
239. Silicate of Copper, Mineral Hill, Arizona.
240. Silver and Copper Ore, Pueblo mine, Nev.
241. Silver and Copper Ore, Pueblo mine, Nev.
242. Native Gold in Semi-Opal, King's mine, Mohawk Valley, Plumas county, Cal.; Mr. Seaman, Downieville.
243. Free Gold in Quartz, Keystone mine, Sierra county, Cal.; Mr. Seaman.
244. White Earth, Tehama county, Cal.; R. G. Sneath.
245. Selenite in Transparent Plates, Tebama county, Cal.; R. G. Sneath.
246. Gold Quartz, Middle Ledge, Silver Mountain, Cal.
247. Steatite (soft) El Dorado county, Cal.; J. Patterson.
248. Steatite (hard) El Dorado county, Cal.; J. Patterson.
249. Monterey Sand (for glass manufacture) Monterey, Monterey county, Cal.; R. T. Holmes.
250. Carbonate of Magnesia, Napa county, Cal.; R. T. Holmes.
251. Hydraulic Cement, Bonicia, Cal.; R. T. Holmes.
252. Hydraulic Cement, Benicia, Cal.
253. Auriferous Sulphurets, Soulsby mine, Tuolumne county, Cal.
254. Copper Ore, New Mine, Tucson, Arizona.
255. Auriferous Sulphurets, Barrett mine, Mariposa county, Cal.

256. White Quartz Sand, Monterey, Monterey county, Cal.; D. Jacks.
257. Cement Gravel, near Mokelumne Hill, Calaveras county, Cal.
258. Gold Quartz, Cinderella Lode, White Mountains, Cal.
259. Gold in Quartz, Eureka mine, Grass Valley, Cal.
260. Auriferous Sulphurets, Eureka mine, Grass Valley, Cal.
261. Gold bearing Quartz, Norambagua mine, Grass Valley, Cal.
262. Gold bearing Quartz, Norambagua mine, Grass Valley, Cal.
263. Auriferous Sulphurets, Norambagua mine, Grass Valley, Cal.
264. Cap Rock, Norambagua mine, Grass Valley, Cal.
265. Wall Rock, Norambagua mine, Grass Valley, Cal.
266. Gold bearing Quartz, Lone Jack mine, Grass Valley, Cal.
267. Gold bearing Quartz, Lone Jack mine, Cal.
268. Gold in Quartz, Lone Jack mine, Grass Valley, Cal.
269. Auriferous Sulphurets, Lone Jack mine, Grass Valley, Cal.
270. Gold bearing Quartz, Providence mine, Nevada county, Cal.
271. Gold bearing Quartz, Providence mine, Nevada county, Cal.
272. Gold bearing Quartz, Lone Star mine, Nevada county, Cal.
273. Petroleum, Mattole, Humboldt county, Cal.
274. Petroleum, Union Mattole Co., Humboldt county, Cal.
275. Petroleum, Joel's Flat, Noble Spring, Humboldt county, Cal.
276. Petroleum (thick) Santa Barbara, Santa Barbara county, Cal.
277. Petroleum, Wiloy Spring, San Fernando Mountains, Cal.
278. Petroleum, Hughes' Spring, San Fernando Mountains, Cal.
279. Petroleum, Pico Spring, San Fernando, Mountains, Cal.
280. Petroleum, Hayward & Coleman claim, Sulphur Mountains, Cal.
281. Petroleum, Stanford Bros. claim, Sulphur Mountains, Cal.
282. Petroleum (refined) from Oil of Stanford claim, Sulphur Mountains, Cal.
283. Petroleum (refined lubricating) from Oil of Stanford claim, Sulphur Mountains, Cal.
284. Petroleum (crude) Cañada Larga, Santa Barbara county, Cal.
285. Petroleum (crude) Santa Cruz, Santa Cruz county, Cal.
286. Petroleum (crude) Bear Creek, Colusa county, Cal.
287. Petroleum (crude) Chas. Stott claim, Santa Barbara county, Cal.
288. Petroleum (refined) Chas. Stott claim, Santa Barbara county, Cal.
289. Petroleum (refined lubricating) Chas. Stott claim, Santa Barbara county, Cal.
290. Petroleum, (refined lubricating) No. 2, Chas. Stott claim, Santa Barbara county, Cal.
291. Silicified Wood, Nevada county, Cal.
292. Silicified Wood, Nevada county, Cal.
293. Silicified Wood, Nevada county, Cal.
294. Silicified Wood, Nevada county, Cal.
295. Silicified Wood, Nevada county, Cal.
296. Silicified Wood, Nevada county, Cal.
297. Silicified Wood, Nevada county, Cal.
298. Lava overlying Auriferous Gravel, Grass Valley, Nevada county, Cal.
299. Metamorphic Rock, from gold belt, Amador county, Cal.
300. Slate, from gold belt, Amador county, Cal.
301. Wall Rock of Gold Veins, Boulder Lode, Placer county, Cal.
302. Wall Rock Soulsby Lode, Tuolumne county, Cal.

The specimens are all carefully numbered as above, and are accompanied by labels, giving the locality in full. They are all fresh and characteristic specimens, and are, generally, about four inches square. The only box of specimens sent in for the collection was from Messrs Crossman & Cochrane, of Downieville, through whom the the mines of that vicinity are well represented. The Agricultural Society at Sacramento, contributed some fine specimens from the duplicates in its cabinet. Dr. Harkness and Dr. Frey, of Sacramento, sent a large mass of silver ore, weighing over 100 pounds, from the Camanche claim, Blind Springs (No. 62). This is the largest specimen sent forward, and is separately packed. The whole collection fills eleven boxes. A fine collection of specimens from Grass Valley, has gone forward from New York, to be arranged in connection with those sent from here direct.

## Scientific Miscellany.

### Geological Changes.

Contrary to the generally received idea, the great forces of nature which have built up the earth's crust—changed it by metamorphic action, thrown up mountains here, scooped out valleys there, uplifted immense areas of stratification, and covered large tracts with molten lava—have ever been slow and uniform in their action. The geologist beholds unmistakable evidences of immense changes; he learns from the book of nature that continents have risen and sunk; that where oceans now roll, dryland once existed; while mountains bear upon their lofty slopes unmistakable evidences of having once been beneath the sea. Time was when these stupendous changes were supposed to have been confined to a few thousand years at most; and no other conclusion was left but to suppose them the result of deluges, convulsions, and cataclysms of a most extraordinary character. More mature reflection, however, and a more intimate acquaintance with the laws of the Universe, have of late years changed the current of thought among scientific minds, and Nature's economy is now regarded as slow and uniform, even in the working out of its grandest results; and that violent geological phenomena have had no existence except in local accidents of no general significance. Continued and careful observation, and the comparison of the present appearances of localities with that recorded in early historic times, taken in connection with other evidences of unmistakable significance, show us that continents even now rise and sink much as they formerly did. There is much reason to believe that the early inhabitants of Great Britain traveled dry shod back and forth from Central Europe, over what is now known as the British channel; and that the aborigines of our own continent found their way thither, without the aid of boats, across Bohring's Straits! So slowly have these great changes been wrought, that the movement which has brought them about could only be detected by the closest observations, made at long intervals of many generations between. A single life-time is much too small to even detect that nature is working at all—much less are we to infer any destruction to human life from the occurrence of such changes.

**A REMARKABLE CRYSTALLIZATION.**—The *Chemical News* says that some five tons of glycerine was recently transported from a German manufacturing house to the city of London, passing most of the distance by railroad. When it left the manufactory it presented the ordinary appearance and viscid conditions of glycerine. It was exposed, during its transit, to a very low temperature. On being examined in London, the entire lot (contained in casks of about 800 pounds each) was found to be a solidified mass of crystals, so hard that it required a hammer and chisel to break it up! The cause of the crystallization is conjectured to have been the vibration of the railway carriage, accompanied by intense cold, which enabled the particles to arrange themselves in crystalline form, analogous to the crystallization of wrought iron under the influence of vibration, or that of platinum salts when agitated by a stirring rod. The circumstance appears to have elicited much attention on the part of scientific men in the British metropolis, so much so that a series of experiments was to be tried upon glycerine, by agitation under different degrees of temperature, to determine the truth or otherwise of the theory above suggested.

The tubes of tubular bridges are generally painted white, so as to increase the radiation, and diminish the effects of expansion and contraction caused by the alternations of temperature.

The feed-water of boilers acquires a galvanic effect in passing through the copper tubes of surface condensers.

**THE CLIMATE OF THE CARBONIFEROUS ERA.**—The luxuriant vegetation of the carboniferous era was undoubtedly due, in a great measure, to the physical difference between the atmosphere of that early age and that which exists at the present time. This difference most likely arose, in the main, from a large excess of carbonic acid gas, which would form a very dense atmosphere, and act as a heavy covering for the earth; preventing, to a much greater extent than our present atmosphere can, the loss of heat by radiation, while at the same time it would offer but little if any more obstruction to the passage of the sun's rays, than now exists. Such an atmosphere would perform very much the same service which a glass covering does for a hot house; creating for the lower levels, say to within a few hundred feet of the earth, a tropical climate, which would extend even into high latitudes, and produce, even there, a luxuriant vegetation, such as is now found only in equatorial regions. There is much reason for believing that such an atmosphere might fully account for all the facts connected with the high northern distribution of fossil organic remains; the presence of which, in such localities, is often held to involve a no less important phenomena than a material change in the poles of the earth. A simple change in the constitution of the atmosphere, which might be attended with the same results, would seem to be more in unison with the harmony, uniformity and quietness of Nature's laws, than any violent disturbance in the established order and position of our planet. It may readily be conceived that any such excess of carbonic acid gas might gradually become fixed in vegetable and mineral compounds, so as to finally admit the presence of animal life, and the gradual decrease of temperature to our present status.

**NEW USE FOR PHOTOGRAPHY.**—George G. Rockwood, of New York, is said to have recently devised an apparatus for automatically registering, by photography, the state of the thermometer and barometer at various times of the day. He arranged clock work in the interior of a box containing a camera and a series of revolving sensitive plates, which at regular intervals would open a cover to the camera tube and form a photographic image of the object before it. This apparatus placed before a spirit thermometer would of course secure accurate pictures of the standing of the instrument, upon the plates successively exposed to the action of the light.

**ANOTHER.**—M. Carradi, an engineer at Marseilles, proposes to register the path of a ship, and its various tackings and evolutions, by means of photography. He calls the instrument a "lexodograph," and by it registers the various movements of the compass upon a roll of sensitive paper.

**FRICTION OF WATER.**—The friction of fifty square feet of surface on a vessel's side, which has been smoothly painted, is found to be about eight pounds at four nautical miles per hour; when the speed is increased to eight miles, the friction is increased to twenty-five pounds; at sixteen miles, the friction would be seventy-five pounds. Thus, when the speed is doubled, the friction is increased a little over three times.

"There is no inequality on the surface of the earth which does not owe its outline to the disintegration of that surface during ages, and so there is no extensive tract of land which does not owe its construction to those geological agents which have framed the globe, and in course of time made it successively what it has been at different periods."—*Agassiz*.

**LEAD AND ZINC** are greatly expanded by heat—the latter metal expands nearly two and a half times as much as wrought iron under equal temperatures.

**COMPRESSIBILITY OF GAS.**—One thousand cubic feet of ordinary illuminating gas may be readily compressed into a space of ten feet.

**THE CATACOMBS OF ROME** are to be photographed by the aid of the magnesium light. The pictures are to serve as illustrations to an elaborate work on the Catacombs.



## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board  
SAN FRANCISCO, SATURDAY MORNING,  
March 23, 1887.

## MONEY MARKET.

The money market presents no material variation, and discounts are readily obtainable in bank at 1@1½ cent. per month. There is rather more confidence felt in first class mining stocks as a basis of security, and loans are now made at a rather less margin from their market value than formerly, although in some instances outside rates are paid—1½@2 cent. per month.

Transactions in bonds have been small—Government securities are not freely offered, being chiefly held for investment. June 7-30's sold at 79½@79¾, and at the close 79½ is bid and 80 asked.

Legal Tenders have been more active for the payment of freights due upon a large quantity of merchandise which has arrived recently—selling at 74¼c, and buying at 74½c.

The aggregate sales in the Stock and Exchange Board, of Stocks, Bonds and Legal Tender Notes, during the month of February, 1887, amounted to \$3,303,520.50; in February, 1886, \$3,752,292; in February, 1885, \$2,358,855; in February, 1884, \$2,726,420.50—total in four years during the month of February, \$12,191,088.

## CITY STOCKS.

The sales of city shares since our last reference have been very light, and generally speaking this class of securities are not much inquired for at present. We note sales of San Francisco Gas Company at \$69.50, buyer 15. California Steam Navigation Company sold at 66½ cent. A few shares of Oakland Railroad stock were disposed of at \$50 per share, and National Insurance Company at \$72.50.

At the annual meeting of the stockholders of the San Francisco Insurance Company, held on Tuesday, the 19th instant, the following persons were elected directors for the ensuing year: E. W. Burr, L. A. Booth, C. D. O'Sullivan, Henry H. Haight, Wm. Bosworth, J. De la Montanya, Jos. G. Eastland, O. L. Shafter, John Archibald, R. B. Woodward, B. F. Northam, Geo. J. Brooks, John Van Bergen, Benj. D. Dean, Geo. C. Boardman, C. Mayne, G. H. Gray, E. Hull, C. W. Carmany, J. H. Rutenberg, and Benj. Brewster. Subsequently the Board re-elected the following officers: Geo. C. Boardman, President; C. D. O'Sullivan, Vice President; P. McShane, Secretary.

## MINING SHARE MARKET.

The mining share market has been buoyant this week, and with scarce an exception all stocks were sought for at higher figures. The "bear" influence seems to have spent its force, without being able to resist the upward tendency of prices. The developments made within the past few months in different mines have given a new lease of life to nearly every portion of the Comstock lode, and if at still greater depths large bodies of ore continue to be found, an active speculation is likely to take place the ensuing spring. Many well-informed persons are of the opinion that the future prospects of several claims were never as flattering as at present, and that during the summer months larger dividends may be confidently anticipated.

HALE & NORCROSS—continues to be firmly held, and there is some inquiry for it at a considerable advance from our last quotations. We learn that five shares were sold privately early in the week at \$3,650 per foot. This company is in a very prosperous condition, and its future is thought to be no less flattering. One year ago last December this stock was sold as low as \$95 per foot.

SAVAGE—Savage has been in better favor since our last reference, opening at \$1,825 @ \$1,830, advancing to \$1,945@1,975, then selling at \$1,960, seller 30, and at the close \$1,950 is bid. The ore extracted from the mine during the week ending March 16th amounted to 902 tons, showing an assay value of \$29,816—equal to \$33.05 per ton. Of this amount, 554 tons came from the sixth and seventh stations, and 327 tons from the Curtis shaft, from points which it is thought might become inaccessible in a very short time. We are informed that the south winze, Curtis shaft, is still in good ore, and has now acquired sufficient depth to connect with the 780-foot level of the Hale & Norcross Company. It is thought that the

development of the last fifty feet of this winze will add very materially to the value of the mine. The required 100 feet, from the seventh to the eighth station in the Curtis shaft, have been sunk, and the new station will soon be opened. The other portions of the mine are in the same good condition as reported some time ago.

CROWN POINT—has also advanced during the period under review, rising from \$825 to \$900 and \$925, and at the close selling at \$905. Mail dates to the 17th instant say that the east drift from the 500-foot station is in 54 feet, and the west drift 20 feet. Sinking toward the sixth station will be commenced about the first of next month. During the week ending March 17th, 496 tons of ore were raised from the mine. Nothing of any special importance, it is said, has been developed recently, notwithstanding a considerable force has been employed in prospecting.

YELLOW JACKET—sold at irregular prices, jumping from \$810 to \$845 and \$880, dropping to \$825@810, rallying to \$840, and closing at \$828. We have been unable to obtain any information in regard to the condition of this mine since our last issue.

GOULD & CURRY—advanced from \$465 to \$490@495, then sold at \$507.50, and closed yesterday at \$510. This company is still drifting south on the fifth station, apparently meeting with no success in finding ore. The mill has been idle for some time on account of the bad condition of the roads, which have prevented a supply being brought to hand. This mine, it is thought, will fully produce the amount of ore estimated to be in reserve by the Superintendent in his annual report last December. From December 1, to November 30, 1886, 60,417 tons of ore were reduced—an average of 5,300 tons per month.

CHOLLAR-POTOSI—continues active at enhanced rates from closing sales of last week, improving from \$248 to \$259, and closing yesterday at \$249. The winze in the north drift from the first station, new shaft, is down to the Hale & Norcross company's drift. Water interfered with further work at that point, and those engaged in sinking were employed in taking out the ore standing above the first station over the winze. The south drift from the same station is in 102 feet, running in clay and porphyry; second station, north drift, is in 360 feet—good drifting; the north drift from the third station, has been carried 252 feet from the shaft, and is now in hard blasting rock, said to be the same as encountered before gaining the ledge in the first station.

IMPERIAL—sold to a considerable extent during the past week, rapidly advancing from \$220 to \$247.50, receding to \$225, and closing at \$233. The first clean up of this month shows a bullion yield of nearly \$18,000.

OPHIR—improved from \$230, buyer 30, to \$245, buyer 30, and closed at \$238. We have nothing special to mention in regard to this mine since our last report.

EMPIRE—has been quite actively dealt in at an advance, improving from \$170, seller 30, to \$193, then realizing \$187.50, closing yesterday at \$186. Late information from this company's mine is of a very satisfactory nature, and a more than ordinary yield of bullion during the month of March may be safely predicted.

BELCHER—improved from 107, seller 30, to \$120, and closed yesterday at \$122.50.... CONFIDENCE advanced from \$33 to \$36, (assessment delinquent), and at the close sold at \$37.... BULLION declined from \$28.50 to \$25.25, and closed at \$25.... DANEX sold at \$19@15.50.... GOLDEN RULE (Cal.) sold at \$14, seller 10. This company disbursed on the 9th inst. \$1,500, or fifty cents per share, in the shape of dividends.... OVERMAN sold at \$17.50, and at the close \$18 is bid. An assessment of \$10 per share was levied on this stock on the 12th inst.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$693,106.75.

## National Mineral Land Law, Instructions. Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address Dewey & Co., office Mining and Scientific Press, San Francisco.

## Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

## SALES OF THE WEEK

BY THE S. F. STOCK & EXCHANGE BOARD

## Monday, March 18.

## AFTERNOON SESSION.

20 shs Imperial at 220 per share, b.5.  
14 shs Imperial at 220 per share.  
2 shs Empire M & M Co. at 175 per share.  
7 shs Empire M & M Co. at 177½ per share.  
5 shs Empire M & M Co. at 180, b.30.  
6 shs Empire M & M Co. 177½ per sh b.15.  
6 shs Empire M & M Co. at 180 per sh.  
95 shs Ophir at 228 per foot.  
95 shs Ophir at 230 per foot.  
10 shs Bullion at 25½ per share.  
15 shs Bullion, at 27 per share, s.30.  
1 sh Yellow Jacket at \$80 per foot b.30.  
3 shs Yellow Jacket at \$80@850 per ft s.30.  
4 shs Yellow Jacket at \$80 per foot.  
3 shs Yellow Jacket at \$75 per foot.  
4 shs Yellow Jacket at \$77½ per foot.  
4 shs Yellow Jacket at \$80 per foot.  
2 shs Yellow Jacket at \$75 per foot, s.10.  
4 shs Yellow Jacket at \$80 per foot.  
4 shs Yellow Jacket at \$72½ per foot.  
1 sh Yellow Jacket at \$77 per foot b.30.  
5 shs Yellow Jacket at \$15 per foot, s.30.  
2 shs Yellow Jacket at \$72½ per foot.  
9 shs Chollar-Potosi at \$25@256 per foot.  
20 shs Chollar-Potosi at 250 per foot b.30.  
6 shs Chollar-Potosi at 255 per share s.30.  
2 shs Savage at 1905 per foot.  
2 shs Savage at 1930 per foot.  
1 sh Savage at 1920 per foot, s.30.  
1 sh Savage at 1910 per foot.  
1 sh Savage at 1945 per foot.  
Amount of sales .....\$150,675 00

## Tuesday, March 19.

1 sh Cal Steam Nav Co at 66½ per ct.  
8 shs Gould & Curry at 465 per foot.  
4 shs Gould & Curry at 465 per foot.  
20 shs Gould & Curry at 484@490 per ft b.30.  
5 shs Oakland Railroad at 50 per share.  
31 shs Chollar-Potosi at 255@256 per foot.  
20 shs Chollar-Potosi at 254@255 per ft b.30.  
5 shs Chollar-Potosi at 255 per foot s.10.  
10 shs Chollar-Potosi at 258@259 per ft, b.30.  
4 shs Belcher at 112½ per foot.  
4 shs Belcher at 115 per foot.  
5 shs Imperial at 224 per share.  
10 shs Yellow Jacket at \$75 per foot.  
7 sh Yellow Jacket at \$75 per foot.  
3 shs Yellow Jacket at \$85 per foot, s.30.  
3 shs Yellow Jacket at \$80 per foot, s.30.  
2 shs Yellow Jacket at \$84@855 per ft, b.30.  
9 shs Yellow Jacket at \$83@837½ pr ft, s.10.  
1 sh Yellow Jacket at \$83@850 per foot.  
2 shs Empire M & M Co. at 180 pr sh s.10.  
7 shs Empire M & M Co. at 885 pr sh, b.30.  
1 sh Empire M & M Co. at 182½ per sh.  
8 shs Crown Point at \$50 per foot.  
12 shs Crown Point nt \$60 per foot.  
10 shs Ophir at 231@229 per foot.  
15 shs Bullion at 25 per share.  
10 shs Bullion at 25 per share, s.30.  
10 shs Confidence at 32 per share.  
10 shs Confidence at 33 per share.  
40 shs Daney at 19 per share.  
\$3,000 Legal Tender Notes at 74½c.

## AFTERNOON SESSION.

24 shs Ophir at 229 per foot.  
48 shs Ophir at 230 per foot.  
95 shs Ophir at 229@227½ per foot.  
72 shs Ophir at 229@228 per foot.  
3 shs Empire M & M Co at 190@193 per sh.  
6 shs Empire M & M Co. at 192½, s.30.  
5 shs Empire M & M Co. at 195@200, b.30.  
8 shs Gould & Curry at 485 per foot s.30.  
20 shs Gould & Curry at 490 per foot.  
12 shs Gould & Curry at 500 per foot b.30.  
4 shs Gould & Curry at 497½, per ft, b.30.  
10 shs Imperial nt 224 per share, s.3.  
7 shs Imperial at 230 per share.  
5 shs Imperial at 232 per share, b.20.  
10 shs Imperial at 230 per share, s.3.  
5 shs Imperial at 240 per share, s.30.  
2 shs Yellow Jacket at \$50 per foot.  
2 shs Yellow Jacket at \$52.50 per foot.  
5 shs Yellow Jacket at \$15 per foot.  
1 sh Yellow Jacket at \$42 per foot s.3.  
1 sh Yellow Jacket at \$40 per foot.  
2 shs Yellow Jacket at \$35 per foot s.3.  
2 shs Yellow Jacket at \$35 per foot b.3.  
2 shs Yellow Jacket at \$25@30 pr ft, s.10.  
1 sh Yellow Jacket at \$30 per foot, b.10.  
1 sh Yellow Jacket at \$25 pr ft s.10.  
1 sh Yellow Jacket at \$30 per foot b.10.  
1 shs Yellow Jacket at \$25 per foot.  
1 sh Yellow Jacket at \$20 per foot, s.30.  
1 shs Yellow Jacket at \$10 per ft., s.20.  
1 sh Belcher at 115 per foot.  
15 shs Bullion at 25 per share s.3.  
4 shs Crown Point at \$70 pr ft, b.30.  
\$500 June 7 3 10 Bonds at 79½ per cent.  
\$5,000 Legal Tender Notes at 74½c.  
Amount of sales .....\$128,425 00

## Wednesday March 20.

95 shs Ophir at 231 per foot.  
95 shs Ophir at 231½ per foot.  
16 shs Gould & Curry at 490@495 per ft.  
2 shs Empire M & M Co. at 190, b.30.  
2 shs Empire M & M Co. at 187½ pr sh.  
1 sh Savage at 1960 per foot.  
1 sh Savage at 1950 per foot s.10.  
6 shs Chollar-Potosi at 256@255 pr foot.  
5 shs Chollar-Potosi at 256 per foot, s.30.  
6 shs Overman at 17½ per share.  
10 shs Imperial at 145 per share, b.30.  
10 shs Imperial at 250 per share, b.30.  
5 shs Imperial at 140 per share, s.30.  
20 shs Imperial at 335 per share.  
11 shs Imperial at 247.50 per share.  
6 shs Imperial at 210 per share, b.10.  
10 shs Bullion at 25 per share s.30.  
65 shs Bullion at 23@25.50 per share.  
4 shs Crown Point at 900 per foot b.10.  
10 shs Bullion at 25 per foot s.30.  
35 shs Bullion at 25@25½ per share.  
4 shs Crown Point at 900 per foot, b.10.  
25 shs Crown Point at \$90@800 per ft.  
10 shs Yellow Jacket at \$20@810 per ft.  
9 shs Yellow Jacket at \$15@830 pr ft b.30.

1 sh Yellow Jacket at \$30 pr ft 15.  
18 shs Yellow Jacket at \$25@810 per foot.

## AFTERNOON SESSION.

195 shs Ophir at 232½ per foot.  
248 shs Ophir at 238 per foot.  
60 shs Ophir at 240 per foot b.10.  
5 shs Bullion at 25 per share s.30.  
10 shs Bullion at 25 per share s.3.  
10 shs Bullion at 25½ per share.  
6 shs Imperial at 242½ per share, s.10.  
5 shs Imperial at 240 per share, s.30.  
5 shs Imperial at 243 per share, b.30.  
5 shs Imperial at 239 per share, s.30.  
13 shs Empire M & M Co. at 187½@192½.  
9 shs Yellow Jacket at \$25 per foot.  
1 sh Yellow Jacket at \$15 per foot s.30.  
1 sh Yellow Jacket at \$30 per foot b.30.  
1 sh Yellow Jacket at \$20 pr ft, s.30.  
3 shs Yellow Jacket at \$25 per foot s.10.  
2 shs Yellow Jacket at \$35 per foot b.30.  
1 sh Yellow Jacket at \$30 per foot.  
2 shs Yellow Jacket at \$25 per foot s.3.  
2 shs Savage at 1975 per foot.  
4 shs Crown Point at \$90 per foot.  
1 sh Chollar-Potosi at 256 per foot, s.3.  
5 shs Chollar-Potosi at 256 per foot, s.5.  
10 shs Chollar-Potosi at 256 per foot.  
Amount of sales .....\$106,857 00

## Thursday, March 21.

24 shs Ophir at 229 per foot.  
24 shs Ophir at 240 per foot.  
36 shs Ophir at 242½ per foot, b.10.  
108 shs Ophir at 145 per foot, b.30.  
144 shs Ophir at 242.50 per foot.  
60 shs Ophir at 237 per foot.  
32 shs Gould & Curry at 500@507½ per foot.  
3 shs Confidence at 35 per share.  
15 shs Imperial at 231.50 per share.  
20 shs Imperial at 247 per share.  
10 shs Imperial at 240 per share b.5.  
2 shs Imperial at 238 per share, s.3.  
17 shs Empire M & M Co. at 187@180 pr sh.  
2 shs Empire M & M Co. at 190 pr sh, b.30.  
8 shs Yellow Jacket at \$40 per foot.  
2 shs Yellow Jacket at \$32½ per foot.  
2 shs Yellow Jacket at \$30@332 pr ft s.3.  
1 sh Yellow Jacket at \$32.50 per foot s.10.  
10 shs Bullion at 27 per share b.3.  
2 shs Savage at 1940@1850 per ft, s.60.  
1 sh Savage at 1956 per foot.  
1 sh Savage at 1965 per foot, s.5.  
1 sh Savage at 1965 per foot s.30.  
10 shs Chollar-Potosi at 257.50 per foot.  
9 shs Chollar-Potosi at 258 per foot.  
10 shs Chollar-Potosi at 257 per foot, s.30.  
6 shs Chollar-Potosi at 257 per foot, s.10.  
5 shs Chollar-Potosi at 255 pr ft s.3.  
4 shs Crown Point at \$95 per foot.  
4 shs Crown Point at \$90 per foot.  
8 shs Crown Point at \$95@905 per foot b.5.  
4 shs Crown Point at \$20 per foot b.3.

## AFTERNOON SESSION.

60 shs Ophir at 233 per foot.  
14 shs Confidence at 36 per share.  
20 shs Confidence at 35 per share, s.30.  
20 shs Imperial at 230 per share.  
13 shs Imperial at 225 per share.  
15 shs Imperial at 225 per share, b.3.  
1 sh Savage at 1950 per foot s.60.  
7 shs Yellow Jacket at \$35 per foot.  
4 shs Yellow Jacket at \$40 per foot.  
4 shs Yellow Jacket at \$29 per foot.  
6 shs Yellow Jacket at \$30@335 per ft, s.10.  
1 sh Yellow Jacket at \$35 per foot b.10.  
2 shs Yellow Jacket at \$30 per foot b.10.  
1 sh Belcher at 120 per foot.  
10 shs Chollar-Potosi at 253 per foot s.10.  
3 shs Chollar-Potosi at 229 per foot.  
7 shs Chollar-Potosi at 238 per foot.  
8 shs Crown Point at 920 per foot.  
8 shs Crown Point at 925 per foot.  
Amount of sales .....\$ 99,125 00

## Friday, March 22.

24 shs Ophir at 235 per foot, s.3.  
24 shs Ophir at 236 per foot, s.10.  
95 shs Ophir at 235 per foot.  
120 shs Ophir at 238 per foot.  
8 shs Empire M & M Co. at 180@185 per sh.  
8 shs Gould & Curry at \$15@510 per foot.  
8 sh Gould & Curry at \$10 per foot s.5.  
5 shs Belcher at 122½ per foot.  
30 shs Imperial at 210 per sh, b.30.  
35 shs Imperial at 236 per share.  
6 shs Imperial at 235 per share b.10.  
6 shs Imperial at 234 per share.  
25 shs Confidence at \$46@36 per share.  
55 shs Confidence at \$46@35 per share, s.30.  
10 shs Confidence at 27 per share.  
15 shs Yellow Jacket at \$35@330 per foot.  
1 sh Yellow Jacket at \$40 per foot b.10.  
25 shs Bullion at 25@26 per foot.  
35 shs Bullion at 25 per foot, s.5.  
25 shs Chollar-Potosi at 250 per share b.30.  
10 shs Chollar-Potosi at 250 per foot b.5.  
80 shs Chollar-Potosi at 256@247½ per foot.  
35 shs Chollar-Potosi at 247@243 pr ft, s.3.  
10 shs Chollar-Potosi at 247 per ft, s.30.  
4 shs Chollar-Potosi at 247.50 per foot.  
8 shs Crown Point at 910 per foot.  
4 shs Crown Point at 900 per foot.

## AFTERNOON SESSION.

108 shs Ophir at 238 per foot.  
6 shs Imperial at 235 per share, b.30.  
10 shs Imperial at 230 per share, s.30.  
9 shs Imperial at 233 per share.  
6 shs Empire M & M Co. at 185@186 per sh  
10 shs Daney at 15 per foot.  
10 shs Daney at 15½ per foot.  
4 shs Yellow Jacket at \$35 foot, b.5.  
8 shs Yellow Jacket at \$25@330 per foot.  
4 shs Yellow Jacket at \$25 per ft, s.3.  
5 shs Confidence at 30 per share s.30.  
20 shs Confidence at 33 per share, b.30.  
5 shs Confidence at 37½ per share.  
8 shs Crown Point at 905@907½ per foot.  
4 shs Crown Point at 905 per foot.  
10 shs Chollar-Potosi at 246@247 per sh, s.30.  
20 shs Chollar-Potosi at 246 pr sh, s.10.  
10 shs Chollar-Potosi at 249 per foot, s.10.  
10 shs Chollar-Potosi at 243@250 pr ft b.30.  
35 shs Chollar-Potosi at 250@246 per foot.  
5 shs Chollar-Potosi at 250 per foot.  
Amount of sales .....\$135,499 00



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[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and Date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY	DAY
	DELINQUENT	OF SALE
Arbitrio, Chihuahua, Mex. ....	Annual Meeting March 26	
Brillion, Gold Hill, Feb. 9, \$10. ....	March 11—April 11	
Big Blue Lead, Kern co., Cal., Feb. 19, \$5. ....	April 2—April 23	
Cosala, Sinaloa, Mex., Feb. 12, \$1. ....	April 18—May 7	
Chisholm, Sinaloa, Mex., Feb. 14, \$2. ....	March 22—March 24	
Chiliponcha, Sonora, Mex., Jan. 13, \$5. ....	Mar 8—Mar 25	
Crown Point, Nev. dividend \$8. ....	Payable March 15	
Confidence, Gold Hill, Nev., Feb. 9, \$25. ....	Mar 16—April 4	
Diamond Cop., Del Norte, Cal., Feb. 4, \$2. ....	March 23—April 15	
Dancy, Lyon co., Nev. ....	Annual Meeting Apr 1	
Euro, Nevada, Nev. ....	Mar 22—Apr 8	
Eureka Coal M., Alameda co., Feb. 7, \$5. ....	Apr 8—May 2	
Eureka Coal M., Alameda co. ....	Meeting May 4	
Empire M. & M., Nev. dividend \$10. ....	Payable March 15	
El Tirol, Sonora, Sinaloa, Mex., Feb. 15, \$1. ....	Apr 15—May 1	
Forest Springs, Grass Valley, Cal., Feb. 13, \$40. ....	Apr 13—Apr 30	
Francisco-American, L. C. ....	Adjourned Meeting, March 23	
Great Central, Yuma co., A. T., Feb. 1, \$1. ....	Apr 8—Apr 30	
Geo Washington, Alpine co., Feb. 5, \$3.50. ....	Mar 16—Apr 8	
Gold & Curry, Virginia, Nev. dividend \$90. ....	Payable Jan 8	
Imperial, Virginia, Nev. dividend \$10. ....	Payable Mar 15	
Imperial, Virginia, Nev. dividend \$10. ....	Payable Mar 15	
I. N. L., Alpine co., Cal., Jan. 9, \$1.50. ....	March 16—April 1	
Julia, Storey co., Nev., Feb. 14, \$1. ....	April 18—May 8	
Keystone M., Calaveras co., Feb. 24, \$10. ....	Apr 29—May 20	
La Blanca, Sonora, Mex., Jan. 31, \$1.50. ....	Mar 12—Apr 12	
Min. Tenabo, Lander co., Nev., Feb. 15, \$1. ....	Mar 21—Apr 11	
North Star, Lander co., Nev., Feb. 14, \$5. ....	Apr 24—May 15	
Nuestra Señora de Guadalupe, Feb. 15, \$1. ....	Apr 17—May 16	
Oroville, Butte co., Cal., Feb. 14, \$3.50. ....	Mar 21—Apr 2	
Overman, Storey co., Nev., Feb. 12, \$10. ....	Apr 18—May 4	
Pattocchia & Dolores, Mex., Feb. 1, \$3. ....	Mar 5—Mar 22	
Rattlesnake, Yuba co., March 22, \$1. ....	Apr 25—May 14	
Santa Cruz, Santa Cruz co., Mex. 9, 50c. ....	Apr 13—Apr 30	
San Rafael, Sonora, Mex., Jan. 13, \$50c. ....	Mar 8—Mar 30	
Imperial S. M., dividend \$2. ....	Payable March 14	
Savage Virginia, Nev. dividend \$100. ....	Payable March 8	
Smoky Valley, dividend \$10. ....	Feb 22—March 25	
Sidley Virginia, Nev. Jan. 21, \$1.50. ....	Feb 22—March 25	
Salamanca, Calaveras co., Feb. 11, \$5. ....	Mar 15—Apr 10	
Sierra Nevada, Storey co., Nev., Feb. 15, \$4. ....	Mar 21—Apr 6	
Seaton, Drytown, Cal., Jan. 15, \$200. ....	Sale April 6	
Tellurium, Amador co., Cal., Feb. 9, \$1. ....	Apr 13—Apr 29	
Yentana, Durango, Mex., Feb. 4th, \$1.50. ....	Apr 6—Apr 21	
Whitaker, Lander co., Nev., Feb. 14, \$15. ....	Mar 29—May 21	
Young Harmon, El Dorado co., Feb. 14, \$2. ....	Mar 23—Apr 8	
Yosemite, Humboldt co., Feb. 25, \$175. ....	Mar 1—Mar 24	
Yellow Jacket, Gold Hill, div. \$50 sh. ....	Payable Jan 15	

\*Those marked with an asterisk (\*) are advertised in this journal.

### Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	
FRIDAY EVENING, March 22, 1887.	
MISCELLANEOUS STOCKS.	
United States 7-30th Bonds, Jan. Issue. ....	79 1/2
Legal Tender Notes. ....	74 1/2
California State Bonds, 7s, 1887. ....	90
San Francisco Bonds, 10s, 1881. ....	100
San Francisco Bonds, 10s, 1881. ....	95
San Francisco City and County Bonds, 6s, 1888. ....	72
San Francisco City and Co. Bonds, 7s, 1886. ....	80
San Francisco City and Co. Bonds, 7s, 1882. ....	80
San Francisco City and Co. Bonds, 7s, 1884. ....	81
San Francisco City and Co. Bonds, 7s, 1885. ....	80
San Francisco City and Co. Bonds, 7s, 1883. ....	80
San Francisco City and Co. Bonds, 7s, 1884. ....	80
Sacramento City Bonds, 7s, 1885. ....	18
Sacramento County Bonds, 6s. ....	60
Marquette Bonds, 10s. ....	75
Stockton City Bonds. ....	90
Yuba County Bonds. ....	95
Santa Clara County Bonds, 7s. ....	70
Bute County Bonds, 10s, 1890. ....	70
San Mateo County Bonds, 7s. ....	70
California Steam Navigation Co. ....	65
Spring Valley Water Co. ....	67 1/2
State Telegraph Co. ....	23

### GAS COMPANIES.

San Francisco Gas Co. ....	69	70
Sacramento Gas Co. ....	—	80

### RAILROADS.

Sacramento Valley Railroad. ....	40	45
San Francisco and San Jose Railroad. ....	54	60
Oakland Railroad. ....	—	40
Central Railroad. ....	49	60
North Beach and Mission Railroad. ....	—	18
Front Street, Mission and Union Railroad. ....	—	18

### BANKING INSTITUTIONS.

California Loan and Savings Society. ....	—	—
Bank of Pacific Accumulation Loan Society. ....	—	90
The Bank of California. ....	134	—

### INSURANCE COMPANIES.

Fireman's Fund Insurance Co. ....	102 1/2	105
Fidelity Insurance Co. ....	125	127
San Francisco Insurance Co. ....	125	130
Northern Mutual Marine Insurance Co. ....	400	450
California Insurance Co. ....	1550	1750
Union Insurance Co. ....	102 1/2	110
California Home Insurance Co. ....	—	92
Home Mutual Insurance Co. ....	—	—
Occidental Insurance Co. ....	90	95
National Insurance Co. ....	72	72 1/2

### MINING STOCKS—WASHOE DISTRICT.

Alpha. ....	175	200
Baltimore American. ....	120	122 1/2
Belcher. ....	25	26
Butte, G. H. ....	30	31 1/2
Crown Point. ....	30	31 1/2
Confidence. ....	249	257 1/2
Chollar-Potosi. ....	249	257 1/2
Danley. ....	15	16
Excelsior. ....	185	187
Empire Mill and Flaring Co. ....	185	187
Gould & Curry. ....	185	187
Hale & Norcross. ....	29 1/2	30 1/2
Imperial. ....	233	235
Judy Bryan. ....	233	235
Ophir. ....	233	235
Overman. ....	18	19
Savage. ....	185	200
Yellow Jacket. ....	327	330
Golden Rule, California. ....	10	15

### San Francisco Market Rates.

Wholesale Prices.	
FRIDAY, March 22, 1887.	
Flour, Extra, per bbl. ....	\$5.50 @ \$6.75
Do. Superfine. ....	4.75 @ 5.25
Corn Meal, per 100 lbs. ....	2.00 @ 2.25
Wheat, per 100 lbs. ....	1.50 @ 1.95
Oats, per 100 lbs. ....	1.00 @ 1.15
Barley, per 100 lbs. ....	80 @ 90
Confection, per 100 lbs. ....	2.00 @ 3.00
Potatoes, per 100 lbs. ....	60 @ 1.25
Bay, per ton. ....	9.00 @ 12.50
Live Oak Wood, per cord. ....	9.00 @ 10.00
Beet, on foot. ....	8 @ 12
Beet, extra, dressed, per lb. ....	11 @ 12
Sheep, on foot. ....	4.00 @ 5.00
Hogs, on foot. ....	7 @ 10
Hogs, dressed, per lb. ....	10 @ 11 1/2

### GROCERIES, ETC.

Sugar, crushed, per lb. ....	13 1/2 @ 13 3/4
Do. China. ....	9 @ 10
Do. Costa Rica. ....	20 @ 22
Do. Rio. ....	20 1/2 @ 23

Ten, Japan, per lb. ....	85 @ 95
Do. Green. ....	60 @ 1.25
Hawaiian Rice, per lb. ....	65 @ 75
China Rice, per lb. ....	65 @ 75
Coal Oil, per gallon. ....	16 @ 21 1/2
Candles, per lb. ....	20 @ 27 1/2
Ranch Butter, per lb. ....	18 @ 21
Shades Butter, per lb. ....	16 @ 18
Cheese, California, per lb. ....	10 @ 16
Eggs, per dozen. ....	25 @ 27
Lard, per lb. ....	13 @ 14
Ham and Bacon, per lb. ....	16 @ 18
Shoulders, per lb. ....	12 1/2 @ 15

Retail Prices.	
Butter, California, fresh, per lb. ....	30 @ 35
Do. pickled, per lb. ....	25 @ 30
Do. Oregon, per lb. ....	25 @ 30
Do. New York, per lb. ....	35 @ —
Cheese, per lb. ....	15 @ 25
Honey, per lb. ....	10 @ 40
Eggs, per dozen. ....	25 @ 30
Lard, per lb. ....	15 @ 16
Ham and Bacon, per lb. ....	18 @ 22 1/2
Cranberries, per gallon. ....	1.00 @ 1.25
Potatoes, sweet, per lb. ....	3 @ 5
Tomatoes, per lb. ....	— @ 5
Onions, per lb. ....	3 @ 5
Apples, per lb. ....	3 @ 5
Pears, Table, per lb. ....	8 @ 10
Plums, dried, per lb. ....	13 @ 15
Peaches, dried, per lb. ....	11 @ 13
Drumsticks, per dozen. ....	75 @ —
Lemons, per dozen. ....	50 @ 75
Cheekins, unice. ....	20 @ 25
Burkys, per lb. ....	7 @ 10 1/2
Soap, per lb. ....	14 @ 15
Soap, Castile, per lb. ....	14 @ 15

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BUCKLAND (Rev. Wm.)—Geology and Mineralogy. 2 vols. 8vo. cloth. ....	10.00
CONDON.—Mining Laws and Forms of California and Nevada, and the Mining Ordinances of Mexico. 184 pp. 8vo; flexible cloth; 1864. (The only compilation extant.) ....	2.50
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## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

The *Miner* of March 2d, says that the people of Alpine are waking up to the fact that their ores must be smelted; that after all, the combination which has been deplored as the cause of their refractory character, is a most fortunate one, and adds: The time will soon come when, instead of being a cause of discouragement, these "refractory" ores will be sought after in preference to others equally rich in gold and silver; when a lode containing this class of ore will be preferred to one wanting in sulphurets, both because of the greater persistency in depth, the stability of the sulphuret lode, and because the copper contained in such lodes can be made to pay all expenses, leaving the precious metals as nett profit.

The Secretary of the George Washington company learns by telegram that the company had a house swept away by a snow slide, and work had been suspended on their mine two weeks.

## Amador County.

*Times'* correspondent at Volcano, March 12th, says: Since the winter seems to be broken our millmen have gone to work again, and apparently with a prospect of success. Our quartz mines, in particular, seem the most flattering. Fogus & Co. have started a shaft since they bought the Golden Eagle or Vaughn mine, and got down about 15 ft., and are getting out some very rich rock, said to look as though it would pay \$500 to the ton. The Golden Gate company are also said to be getting out rich rock; they are working 240 ft. below the surface. J. M. Hanford has gone to work again on the old Romer mine.

## Butte County.

The *Chico Courier* of March 1st is informed by Mr. Shellhous that the mines about Cherokee are paying the best they have for several years, owing to the unusual quantity of water. One claim alone has taken out over \$20,000 since the first rains. The mines appear to be inexhaustible, claims having been worked for over ten years, and found each year richer and richer. Claims have been worked 70 and 80 ft. deep, without striking bedrock. Preparations are now being made to tunnel the mountain, the base of which has been discovered to be quartz gravel, and appears to be an ancient river bed.

## Calaveras County.

The *San Andreas Register*, of March 16th, has a letter from Chee Chee, which gives these items: New placer mines are being discovered, and many of them prospect well. Among the best is that owned by Judge Collins & Co., in Burke's Gulch. They have struck the old channel. It prospects entirely beyond all expectations. They have taken out some very large nuggets.... R. B. Warner's claim is paying exceedingly well.... H. Butterfield has opened a new claim on the Dead Man's Hill, which prospects well.... Hatch's claim still continues to pay well.... The claims on Warren's Ranch are turning out better than was anticipated.

West Point correspondent of the *Chronicle* says, March 14th: Henry & Lasecy's mill is now in constant operation, crushing custom rock.... Some rich quartz leads have been recently discovered in the vicinity of Sandy Gulch.... Mr. Holmes new mill on the South Fork of the Mokelumne river, is a splendid and substantial piece of work. It has at present 10 stamps, with provision for 10 more. The motor is a Tyler wheel.

Letter to the *Times* from Copperopolis, March 8th, says: The famous Union mine is now worked at a depth of from 500 to 600 feet. Night and day the work goes on, fresh hands relieving one another at intervals. Thousands of tons of rich ore are already out, more than can be transported to Stockton for many months to come.

## El Dorado County.

From the *Placerville Courier* of March 16th: Williamson, Click & Co., who have been prospecting for a quartz ledge on the south side of Clay Hill for the past month or two, have struck a well-defined ledge at a depth of 30 ft., which pays \$60 to the ton.

On Saturday last Mr. Shepherd showed us 14 lbs of rock from his claim. It appeared to be half gold, and was but a fair sample of about \$1,000 worth which he took out in 15 minutes that afternoon.

A test of some rock from the Arvidson lead shows \$60 to the ton.

Letter to same from Mud Springs: The Pochontas has an incline of 108 ft., with a 3½-ft. ledge. The 10-stamp mill resumed work on Monday last. The rock pays \$10

per ton on the average. The company are working 14 hands. Mr. Kelsea, employing six or seven hands, is working a surface claim close by the mill, and is doing well. The miners, owing to a scarcity of water during the dry season, employ their time in crushing surface quartz, which is found in abundance, and pays well.

From the *Democrat* of March 16th: On Saturday last, Mr. James Tullock sold his claim at Brownville, in this county, to Mr. G. W. Swan of this city, and parties in San Francisco, for \$18,000 in gold coin. Mr. Tullock commenced work on this claim in July last. After testing it, he erected a small mill. Four hundred tons of rock crushed in this mill averaged \$38. The ledge is 3 ft. wide, and well defined.

## Humboldt County.

From the *Humboldt Bay Journal* of Feb. 21st: Operations on the Irwin Davis well, Bear River, under the superintendency of Mr. Jno. V. Hunter, were resumed last week. The work on the Irwin Davis well, Mattole, has been suspended, and the machinery taken to Bear River. From the Union well, Mattole, we hear of good indications. At a depth of about 200 ft. a vein of oil has been struck.

A Klamath letter to same says: Mr. Hopkins, of Orleans, has sold his mining claim to Mr. Wm. Lord for the sum of \$4,500.

## Los Angeles County.

A letter to the *Alta* of March 18th, from Los Angeles, has the following: There is quite an excitement existing here concerning the new and extensive gold bearing quartz leads recently discovered in the Sierra Nevada Mountains (a continuation of the Sierra Nevada) 32 miles from this city, in a northerly direction. They are in a new district, known as the Gleason, adjoining the Soledad on the south. The Gleason ledge is immensely rich in free gold, and also abounds in sulphurets. The Hughes has just commenced sinking on the ledge. The claim is situated on both sides of the water-course, which has cut down the face of the steep mountain and exposed the ledge to a depth of 350 ft. giving a splendid opportunity for working to a great depth on the vein. The ledge thus exposed is full of gold in every part. Two tons of rock, claimed to be a fair average, yielded \$40 per ton.

## Nevada County.

From the *Transcript* of March 14th: The quartz in the mine of the Nevada company is now paying better than it has for several years, and after the last run of nine days the clean-up amounted to \$3,300. The rock which is now being worked is obtained from the upper tunnel.

The Star Spangled Banner mine, at the depth of 240 ft., is rich in sulphurets. We saw a mass of the rock yesterday, weighing 700 pounds.

Same of 15th: About three weeks since, three men commenced mining on a ravine below Newtown. Funds to pay the water bill were furnished by a friend. They soon struck a rich pay streak, and have already taken out over \$300. On Tuesday last they found a nugget worth \$32.50. The gold is all coarse, and the company own sufficient ground to last for three or four years.

Same of 19th: Palmer's mill is to be closed for thorough repairs. The Middle Yuba Canal and Water company sold a one-fourth interest in the American company's claims, situated on Manzanita Hill, on the 15th inst., to the other members of the company for the sum of \$20,000.

The Constitution and Osceola ledges, near Rough and Ready, will be immediately opened.

Work was to have been resumed upon the Last Chance copper mine yesterday. The owners have abundance of capital. A large lot of ore from the Western Star claim is to be shipped for reduction.

Same of 20th: At Little York, Curran & Buckman, in their old cement claims, are working about 35 men. They are taking out, above expenses, from \$200 to \$300 per day. Their tunnel is in 1,500 ft. from the surface, and they have a channel of cement from 16 to 18 ft. in depth. The same parties are always at work in their hydraulic claim. They have a 90-ft. bank. Joseph Gardner is running three sets of claims. He has made no thorough clean-up yet, but from partial returns it is safe to predict an excellent yield. At Liberty Hill, Gardiner is opening five new hydraulic claims. At Lowell Hill, eight miles above Little York, two sets of hydraulic claims, owned by Skein & Co. and Frick Bros., are doing well.

From the *Gazette* of March 14th: Prospects are flattering for a successful mining season in You Bet. The hydraulic miners, who were interrupted by the storm, are all at work now. Several cement mills are doing well.

At San Juan North, the famous Enurka claim, that in other days paid so enormously,

is hardly paying expenses. The Golden Gate has not equaled expectations, although it is paying its stockholders a handsome dividend. The American claim, at Manzanita Hill, yields at each clean-up of from two to four weeks' run, from \$10,000 to \$17,000.

The Grass Valley *National* of 15th says: The owners of the Bowen and Morgan claims, on San Juan Hill, have commenced operations on a large scale. The prospects are flattering.

The Ophir and Allison Ranch claims have been stopped from work for several weeks, by the great quantity of water.

EXCELSIOR.—Meadow Lake correspondence of the *Transcript*, March 15th, gives these items: The California company have struck the Knickerhocker ledge at eighty feet. The lode is fifty five feet in width.

The Winton mill is now on rock from the Lightfoot claim—an extension of the "Golden Eagle." I am confident that the issue will not be a success. The process used, in my judgment, wholly inadequate.

The milling works of the Mohawk and Montreal company will be in operation on the first of April. The ledge has been developed to the depth of 250 feet and shows excellent ore. The Gold Run Phoenix company, in the vicinity of the Mohawk, are working with energy in their tunnel. The ore is reported to be improving. The Golden Eagle company will start up again on Saturday. The Grant Mill has resumed operations.

## Placer County.

From the *Herald* of March 16th: On Tuesday last McBride, McCarty & Co., struck a rich quartz specimen in the old Buckeye claim at Bird's Valley near Michigan Bluff. It weighed 16 lbs. and when pounded up yielded eight pounds of gold. On the Saturday previous, this claim had been abandoned in disgust, by two men who had worked in it all winter.

The owners of the Harpending mine are now repairing their mill, and "getting things in trim" for an early prosecution of work on the mine this Spring. Crosby and Heck have recently completed several arrastras for their mine. A flourishing town called "Valley View," has sprung up at this point.

Wm. Weisler, of Iowa Hill, recently sold his interest in the old Jamison claim for \$8,000.

From the *Dutch Flat Enquirer* of March 6th: Mining operations are everywhere in full blast. From Hawkins and Huyck & Co., whose claims are situated at the extreme southern point of the Gold Run District, all the way for three miles or more northward to Bear river, the pipes are playing.

Letter to same from Colfax: The claim of Dillon & Co. to the west of Colfax, is still paying steadily \$8 and \$10 to the man, and Walker and Co., just above, are doing as well. They have promise of water for some time yet. The quartz fever is yet unabated. Mike Curley has just succeeded in discovering a new lode, and is at present running a tunnel to tap the vein at a respectable depth.

## Plumas County.

*Times* letter from Nelson point, February 22d: The miners at Sawpit Flat, Richmond Hill and Washing Hill, are delving away. They can get water to wash up with but once a year; that is when the snow melts in the spring. The gold is generally smooth and coarse. There is a company that purpose putting a bed rock flume in Nelson Creek. During the last month, the claim at the Willow Ranch, has had a three week's run. Dik's, Reed's and Kane's claims, on Willow creek, are paying wages; and Emmon's, on the same, but a bank claim is suspended for want of water. Richards' and White's, on Sawmill Point, have encouraging prospects.

## Shasta County.

From the *Courier* of March 16th: This week L. A. Kelley made a careful assay of a piece of Pacific rock, taken from the tunnel at a depth of 90 ft. below the surface, and the result was \$497.53 in silver, and \$102.77 in gold, per ton. A bar weighing \$65, at \$14.50 to the ounce, was the yield of one ton of Pacific rock, the first crushed in South Fork District.

## Siskiyou County.

From the *Yreka Union* of March 9th: The proprietors of the Mexican Quartz lead, on the South Fork of Humboldt, have just completed the crushing of 21 tons of their rock, and have come to the conclusion that the pay is insufficient to warrant them in any further exertion on the lead.

## Trinity County.

From the *Journal* of March 2d: Chris. Meckel and Harry Engle have discovered a rich gold quartz ledge near the head of Rich Gulch, a tributary of the East Fork of North Fork. A short distance below the surface the vein is two feet wide, and prospects well. Work is being pushed as rapidly as possible on the ledge discovered near the

mouth of Rich Gulch last fall, by Mr. Greenleaf and Kelton & Kellogg.

## Yuba County.

A correspondent of the *Marysville Appeal*, writing from Paulinville, New York township, March 13th, says: "Yesterday Mr. R. Johnson struck a decomposed quartz ledge about 300 yards from this place, from which he took, with a rocker, and picked up upwards of ten thousand dollars! There are immense quantities of gold still in sight, probably thousands more will be taken out to-day."

The *Appeal* of a later date says: Mr. Johnson came down to the city yesterday, bringing some 200 lbs. of quartz from his new ledge. Some of this is more gold than quartz. It is estimated that the lot will yield some \$10,000. Mr. Johnson was some years since a merchant at St. Louis, Sierra county. He will proceed at once to develop his claim.

At Hachetville, Brown's Ranch, the Independent Company has a ledge between three and four feet thick at the depth of 48 feet on the incline. The Big Chief company is down 20 feet. Some new surface diggings on Little Dry Creek are paying \$4 per day to the hand.

At Dobbin's Ranch, the tunnel in the Bateman Ledge is in 80 feet with good rock. The Wing ledge prospects rich on the top. So also the Gardner, and the Laborde.

Messrs. Hugg and Variel have purchased nearly all the mining ground at Camptonville, and in a few days will be running their sluices.

## ARIZONA.

A Fort Yuma letter, Feb. 23d, has these items: At Prescott there is much excitement over the discovery of new and rich placers on a tributary of the Agua Frio, near the Black Cañon, some sixty miles from Prescott. Many parties had already started for the diggings.

The quartz mills around Prescott have varied fortune. The Borger mill is said to be idle. The Woolsey mill, upon the Ticonderoga, reports excellent returns. The Noyes mill, not yet completed. The Vulture mill, successful.

From the *San Bernardino Guardian* of March 2d: On the Rothschild Copper vein, near the La Paz and Prescott road, five or six men are now at work.... New smelting furnaces for the Great Central Co. are now on the way to Williams' Fork. In the Planet mine, Williams' Fork, very rich copper ore is abundantly found. Knowles & Coffin are perfecting their smelting furnaces.... In the Weaver diggings, parties have dug a ditch on Antelope Gulch, half way between Prescott and Wickenburg, seven or eight miles long, and are only waiting for the annual rains to furnish water to those miners who threw up dirt in that gulch. Many of them think they have dirt thrown up that in one week's work will make their fortunes. These parties had to pack upon mules their lumber over one hundred miles, through a country infested by Indians; and in digging their ditch, they had to go armed, not daring to leave their guns for a moment.

A letter from Prescott to the *Times* of March 19th, says: Mining prospects continue good. The new placers, near Black Cañon, pay half an ounce per day, it is said, and crowds have left \$4 per day to get double farther off. The past two weeks quartz have also been discovered there.

Umqua quartz lode, eight miles southeast from here, at 80 ft. in depth, prospects better continually. Messrs. Noyes & Curtis own the mill there, now nearly done, and ready to run, Ticonderoga, at 90 ft., prospects richer than ever. But placer mining is all that have been talked of for the past two weeks.

## COLORADO.

Warren & Davis, who are in charge of the works of the Smelting company, at Rush Valley, after actual experience in the working of the Silver King ledge, write us as follows in reference to the mines of that region: The mines of Rush Valley can be made, under skillful and intelligent management, to yield vast quantities of precious metal, and afford profitable employment to a large mining population. This requires, moreover, but a small capital. The total cost of erecting furnaces for the reduction of 48 tons daily will be \$12,000. The daily expenses about \$1,600. The daily product will be; silver \$2,000; lead \$1,600—leaving about \$2,000 daily net profit.

From the *Times*, Feb. 12th: The Gunnell company retorted 234 ozs. for six days run.

We saw to-day a silver brick weighing 29 lbs., worth in coin, \$450; which was from average ore, at a depth of 40 ft., out of the Brown lode, Georgetown, by the Baker Mining company. This brick was the yield from 12,000 lbs. of ore.

About 300 persons are now wintering on James Creek. Cobb & Clough, Showard



and others intend erecting mills there in the spring. There is some work being done on lodes, the deepest shaft being 30 ft. Gulch mining prospects well on James creek proper, averaging 22 cents to the pan, at a depth of 14 ft.

Same of 26th: Fifty-seven ozs., worth \$1,100, was the result of four days run, with 12 stamps, of the Alps and Grenada G. M. companies. The Nash mill, of Russell Dist., has started up again, and is working on Gunnell ore. Black Hawk company's yield was 131 ozs. the last week, that of the Sterling company, 92 ozs.

John Kendall has retorted \$65 gold from half a cord of quartz, taken from a depth of 12 ft. in the National Bank lode on Casto Hill.

From the Denver News of Feb. 13th: The Pine claims were sold to a Cincinnati company, who will commence work early in the season. The Ophir company continues steadily at work.

Same of 27th: We have been shown a letter from Philadelphia stating that ore from the Esmeralda lode, in Snake River Dist., assayed at the United States Mint in that city gave, in silver and gold, at the rate of \$7,500 to the ton. There is some excitement in town about new discoveries at the old Spanish diggings, three miles up the Platte. It is reported that one man washed out \$14 in one day's work, up there recently.

#### IDAHO.

From the Owyhee *Avalanche* of March 9th: Reports from the Dashaway continue to be encouraging, both as regards size of the ledge and quality of the ore. A friend has brought in some exceedingly rich specimens of gold and silver ore from the Rising Star mine. The Oro Fino & Morning Star Mining Co., say they expect to commence work about April 1st. One hundred and thirty-three and one-third feet in the Discovery claims of the Empire quartz lode, on War Eagle, have been sold recently for \$15 per foot, and the money paid. Warnke & Swart, of Flint, have struck a vein of superior ore in the Leviathan. It is reported that the Sherman ledge in Flint district has been sold to Chicago parties. Lewis' process was tried the other day at the Cosmos company's mill. The result was a yield of \$30 per ton more than by the old process.

Letter from Flint district: Greenwell & Carter's mill has been in operation for a few days, and is making a splendid showing. The machinery at present in use is made up of two old mills; but will be replaced by new. The building is a splendid piece of work. They are crushing Rising Star ore. Four tons of 2d-class and 3½ of 1st-class ore, yielded about 150 pounds amalgam at their first clean-up.

At the Silver Cord mine, War Eagle Mountain, a shaft is being sunk from the main tunnel near the south line of the claim, where it is expected to place hoisting works. At this point in the ledge it is very rich, and a few wheelbarrow loads contain a poor man's fortune. The Woodstock proprietors are at work on their ledge and the developments are favorable. They have a shaft down forty feet, partly timbered. The improvement has been gradual from the top. They have some tons of rich ore out, which shows free gold. The Hays & Ray tunnel is being shoved into the mountain as rapidly as three shifts of men per day can do it. They have driven it about 30 ft. in a little over three weeks. Considerable blasting is required. Some good ore is being taken out. The Vulean ledge is a north extension of the Silver Cord—its dip, course and general features prove this beyond a doubt. The tunnel is now in 60 ft., and shows fully two ft. of quartz.

From the Boise City *Statesmen* of March 5th: "It now seems pretty certain that the Lemhi mines are going to be the principal attraction for the migratory miners this season. Our exchanges from different parts of the country begin to notice the departure of parties for the new mines on Salmon. The Salt Lake *Vedette* says that many parties are going from there."

Letter from Bannack to Montana *Post* of Feb. 23d: Several parties that came in from Helena, Virginia and other camps, a few days ago, made their exodus for Salmon river with hand sleds. Daily, new parties are arriving, while others are leaving for the new mines. The news from the El Dorado of the Rocky Mountains, is very satisfactory, and we predict that Salmon river will be the largest mining camp in these mountains the present season.

#### MONTANA.

From the *Post* of Feb. 16th: Cope's mill, Hot Springs District, cleared up 82½ ozs. for a run of 4½ days.

At El Dorado Hill, Calkin's Dist., a new discovery, the dirt is 5 to 12 ft. deep, and prospects from 5 to 12 cents to the pan.

A letter to same from Lost Horse Gulch, Feb. 7th, has the following: The miners are busy preparing for the coming spring. I have seen \$15 and \$20 washed from a single pan of dirt, and never less than 50 cents. Water is abundant.

Same of 23d: In Rochester Gulch, Rabbit Dist., the richest lode discovered is the Watseka. At a depth of 20 ft. the crevice-dirt yields \$1.25 to the pan.

In a new discovery between St. Louis and Skelley gulches, it is about 8 ft. to the bed-rock, and the pay dirt is some 18 inches in depth. A small handful of dirt will pan out \$1, and as high as \$50 has been taken out to the pan.

The Christnought mill will be in running order next week. The machinery used will be Chilean crushers and barrels. The shaft on the Oro Cache, from which they are taking rock, is 75 or 80 ft. in depth, and they will have some 200 tons out to start on.

The Postlewait mill made another clean up on Sunday morning. The run was 7½ days; rock crushed, Kearsarge; amount, about 100 tons; yield, \$3,996. The blanket tailings, which will average \$8 per ton, are not included in this yield. The weekly expenses of mill and mine are about \$650.

On the Lucas lode, the vein suddenly widened out on Saturday to the full breadth of the shaft, showing splendid ore.

Helena items: The Tanahill lode has an incline shaft sunk on it to the depth of 75 ft. We learn that they have now a crevice of 25 inches of splendid looking quartz. The shaft of Whitney & Co., on the bar opposite No. 5 below discovery in Last Chance Gulch, has been sunk 227 ft., and prospects were found from the surface to the depth of 100 ft. On claim No. 7, in the above gulch, a shaft has been sunk 40 ft., running through pay dirt all the way down, and no bedrock as yet reached.

Letter to same from Atlantic City, Lost Horse Gulch, says: In the discovery claim they have lately struck "big pay," sometimes taking out \$5 to the pan.

From the Helena *Gazette* of March 2d: Turnley's mill, on its last clean-up, made returns of \$6,424.45, from 90 tons of Union rock—an average of \$71.33 per ton. Hendrie's mill, cleaned up on last Saturday \$4,392 from a six days' run on second-class ore from the Union. Accounts from Eagle Creek Dist. are of the most flattering character. Some 20 shafts are being sunk, in all of which good prospects are obtained. The gulch is about six miles long.

#### MEXICO.

The *Bulletin* of March 11th has a letter from Lower California, giving these items: There are but two mills in the country that are prepared to work. One, the Pacheco, is a small one of only four stamps and two furnaces for roasting ore. This mill has been running about two years, most of the time on purchased ores. It is located about a mile above San Antonio, on the bank of the San Antonio Creek. It sends from \$2,000 to \$4,000 in bullion to San Francisco by each steamer. The other is that of the Triunfo Silver Mining and Commercial company, located at Triunfo, a small town about five miles west of San Antonio. The company have just completed their new mill and started to crushing on the 28th of January. The new mill works finely. It has run now nearly three weeks, and I am told that they have crushed and roasted about 100 tons per week, but as their barrels were not fully completed, they have amalgamated but a small portion of what was crushed. Their ore has averaged about \$70 per ton.

#### NEVADA.

##### Black Rock.

The Virginia *Enterprise* of March 16th, says: "We were yesterday informed that a lot of ore—400 lbs.—sent to San Francisco by a gentleman of this city who is interested in the Black Rock mines, yielded a bar of silver worth \$28, or at the rate of \$140 per ton. The ores of that region are said to be of a very peculiar appearance and composition. Much of the ore presents a waxy appearance and is variously tinted—some being black and for this reason termed "black wax." The dark colored, waxy ores are thought to be chlorides of silver, changed by exposure to light and the atmosphere. If such is the case it is not a little strange that our miners and prospectors should not long before this have established the fact beyond all question; the mines have certainly been long enough known to our people, as the district was visited by many persons as early as 1860."

##### Esmeralda.

The Virginia *Enterprise* of March 12th, says the first gold bar from Pine Grove, Wilson Dist., is in town. It weighs nearly 140 ozs., and is worth by assay, nearly \$19 per oz. It is the product of 68 tons of ore, worked in Pray's new mill. This is the finest gold yet found on the eastern side

of the Sierra. Pine Grove is 65 miles south-east of Virginia.

The *Reveille* says it is now settled that Mammoth Dist. is in Esmeralda, and not Nye county.

##### Humboldt.

From the Virginia *Trepass*: Pease is having a perfect success in his Winnemucca mines. At 75 ft. he has a fine 4-foot ledge of excellent ore in the Union Series. He is superintending work for a New York company, expects soon to go to the East to report, and return with the means to erect machinery—for crushing or smelting, as may be deemed advisable.

A Unionville telegram, dated March 13th, says: The Humboldt River Gold and Silver Mining company have purchased the Monroe Series, and will immediately proceed to develop it.

From the *Reveille* of March 2d: Copper Dist., in Humboldt county, about 90 miles north-northwest of Austin, was formerly called Battle Mountain Dist., but was reorganized on the 21st of February. A specimen shown us from the Ericsson ledge, is a mass of red oxide of copper, nearly covered with thin layers of green carbonate. The ledge has been opened by an excavation 30 ft. long and 10 ft. wide, but its width not ascertained.

##### Pahranaagat.

The Reese River *Reveille* of Feb. 27th, learns from Mr. Ritter, just arrived from Pahranaagat, that the 5-stamp mill built by Major Raymond, will be taken down and rebuilt immediately. It was very incomplete and defective, and was altogether unsuitable for the work of reducing silver ore. Under the belief that the ore could be successfully treated without roasting, the mill was erected without reverberatory furnaces. The experiment proved a failure. Furnaces were then built of clay found in the neighborhood. After one or two unsatisfactory trials, the arched roof of the furnaces fell in, and they were abandoned. At the same time the battery was discovered to be useless. It had been placed upon soft ground, into which the bed was gradually sinking. The entire structure was shown to be worthless.

The same of March 2d, says that Colonel Allen, just arrived from Pahranaagat, represents mining matters to be very encouraging in the district, and the anticipation of a lively summer very general. The principal work was being done upon the Illinois ledge, although several other mines were being developed.

##### Reese River.

From the *Reveille* of Feb. 23d: The large specimen of mineral from the Child & Canfield location on the Transylvania ledge, in Silver Bend Dist., presented to Col. Buel for the Paris Exposition, weighs 644 pounds, and is the most splendid specimen of a bright-hued silver mineral ever exhibited in the district.

The superintendent of the Great Eastern shipped to-day sixteen bars of bullion valued at \$18,500.

Same of 26th: A rich chimney has been tapped in the Camargo mine, Marshall Cañon, at the depth of 80 ft. below the surface. The work on the shaft will be suspended for the present, and the ore in the chimney will be extracted for immediate reduction.

A new shaft has been opened in the Gilligan mine, Egan Cañon, 300 ft. from the main shaft. The ledge at the depth of 25 ft., is 5 ft. wide, with smooth walls and rich ore.

We learn that the Knickerbocker mill, in Union Dist., will be set in motion immediately. There are some 200 tons of ore at the mill waiting reduction. Two tunnels are being driven in the Great Eastern.

Same of March 4th: Yesterday the stage from the East brought 2,670 ozs. of bullion from the mill of the Social and Steptoe company, at Egan Cañon.

The Rigby company, at Indian Springs, has a tunnel 300 ft. into Potomac Hill. They are taking out good ore from an incline at the summit. In the Liberty mine rich ore has just been developed, in the level 200 ft. below the surface.

Letter to same from Belmont, March 1st, says: Remarkably rich ore has been developed in the tunnel of the Combination company, on High Bridge.

Same of March 5th: Work in Cortez Dist. is just now confined to the Cortez Grant and the Taylor and Passmore, but there is a good prospect that a number of other mines will be opened and developed the coming season.

Same of 6th: The first Southerly extension of the Murphy has been sold to parties in New York, who have organized the Macdonald Silver Mining company, with a capital stock of \$1,000,000, divided into 10,000 shares of \$100 each.

We are informed that the mill of the Twin

River company is temporarily closed, on account of a strike of the men employed in the roasting department. They are working twelve-hour shifts.

Same of 17th: The Silver Hill mill, which had been leased for the reduction of the ore from the Diana mine, was closed yesterday. We are informed that the ore will be worked for the present at the Parrott mill.

At Mammoth Dist., the Mount Vernou company are taking out some ore from one of their drifts, which will work up to \$200 per ton. Ferguson & Co., in the American Flag, are getting a better quality of ore. Major Gillett, of the Ural company, has sent to the Knickerbocker mill a lot of fine ore from the Gould & Curry. Work continues to be prosecuted on the Sacramento. The Albany series of veins open well.

Same of 8th: The Belmont stage, last night, brought three bars of bullion, valued at \$2,449, from the Twin River company's mill.

We have just been furnished with the result of the reduction of 137 tons of Great Eastern ore at the Keystone. This ore was in two lots of 116 and 21 tons respectively. The average yield of the large lot was \$391.18 per ton; of the small lot of siftings, \$101.50 per ton. The yield of the whole 137 tons, made the grand total of \$47,508.71.

Letter from Belmont, to same of 13th: There have been more rich strikes in the mines here, and the agent of the Combination company has gone to San Francisco to make arrangements for forwarding machinery. The Silver Bend Mining company, D. S. Child, superintendent, is taking out very rich ore, and competent experts estimate the value of that already on their dump at \$50,000. The company will erect a large mill this summer.

We saw to-day four bars of bullion, valued at \$4,185.91, the product of 17 tons of ore from the Taylor and Passmore mine, in the Cortez district.

Three tons of ore from the Bucl and Wood, the Transylvania ledge, Silver Bend district, reduced at the Keystone mill, yielded \$371 per ton.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Territorial *Enterprise* of March 13th: The Yellow Jacket dump is filled with excellent ore. The mill will start up in about a week. The Merrimac mill is running upon tailings saved last year. The Brunswick mill is to be enlarged. The Spanish mill at Empire City is not running.

The Nevada mill, formerly known as the Empire mill, in Six-mile Cañon, is now again in full operation, and doing as good work as any mill in the State. It is running on ore from the Chollar-Potosi mine, reducing about 40 tons per day.

Same of 15th: Day before yesterday the Gould & Curry mill resumed work. The company work none but their own ore. The mill reduces 120 tons of ore per 24 hours. The ore houses of that company are filled, and no difficulty will be experienced in furnishing a supply from this time forward.

The following is a statement of the amount of bullion shipped from the office of Wells, Fargo & Co., during the past week: From this city, 13,794 lbs. of assayed bullion, valued at \$350,920.21; from their office in Gold Hill, 4,760 lbs., valued at \$134,231.44.

FOR THE PARIS EXHIBITION.—A splendid locomotive has just been completed at the Grant Works, at Paterson, New Jersey. All the working parts of the engine are of polished steel, the boiler, boiler cylinders, dome and stack being covered with silver. The "cab," or driver's compartment, is constructed of walnut inlaid with maple and satin woods. The various levers and handles are tipped with ivory, and the whole presents a very gorgeous appearance. The cylinder of the engine is 16-inch bore and 22-inch stroke; the driving wheels are 5½ feet in diameter, and have steel tires. The boiler is constructed for burning soft coal. The cost of the engine was \$45,000, or about \$30,000 more than the cost of an ordinary locomotive.

BEEVES are now slaughtered by a stab between the head and the first vertebra of the neck. The spinal marrow is pierced, and the animal drops at once. It is then suspended by the hind legs, and bled. The old way of knocking on the head was attended with such a shock as to prevent free bleeding. By the "pricking down" process, the meat is made more tender, and is believed to be more wholesome.



## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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It is impossible for editors to know all the merits and demerits of their correspondence, consequently the reader must not receive the opinions of our contributors as our own. Intelligent discussion is invited upon all sides, and the evidence of any error which may appear will be resolved in friendship and treated with respect.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

San Francisco, Jan 11th, 1866.  
Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1865.

Mr. E. L. Smith, is a duly authorized Agent for this paper. February 25, 1867.  
Mr. Geo. F. Price is a duly authorized agent for the Mining and Scientific Press. March 23, 1867.

Mr. J. M. Quay will act as agent for the Mining and Scientific Press from this date. March 23, 1867.

## San Francisco:

Saturday Morning, March 23, 1867.

(Reported for the Mining and Scientific Press.)

## California Academy of Natural Sciences.

## REGULAR MEETING.

MONDAY, March 18th, 1867.

President in the Chair.

Twenty-nine members present.

L. C. Lane, M. D., Ellis H. Holmes, Wm. K. Rowell, John C. Pelton, J. A. Baner, Elisha Brooks, Robert Hagen and Dr. J. M. Sharkey, were elected resident members, and W. H. Dall corresponding member.

Donations to Cabinet.—Specimen of *Bdelastoma*, presented by Dr. C. A. Canfield, of Monterey.

Specimen of Wolf-fish, presented by Frank Johnson.

Specimen of Gold from South Carolina, presented by Gregory Yale.

A very large and perfect crystal of horax, from the Borax Lake, by Mr. Lightner.

A bald eagle, presented by Dr. Ayres.

Walla, a nutritious Indian preparation, from Mr. Frank S. Alling.

Donations to Library.—Elliott's Botany of South Carolina, in two volumes, by Dr. Kellogg.

Mr. Stearns made some remarks, as to the true habitat of *Helix Ayresiana*, Newc., also upon the unusual size of a specimen of *Orthyoporus analis*, Ayres, which he had noticed in the fish market in October last.

An elaborate Essay on the Conchology of the west coast of America, was presented by the President from Dr. Cooper; referred to the Committee on Publication. Dr. Kellogg presented seeds of the wine plant, a species of rhubarb. Mr. Ewer read a communication from Prof. Blake, on the submerged forests of the Columbiariver. These are fir trees from which the tops have disappeared, the trunk being left standing. They are not seen in high water, but in low water stand at various heights, from a few inches to three feet. They are not petrified, but are decayed on the outside and sound within. Some of the wood was exhibited. From the character of the formation Prof. Blake considered that at the Cascades the river had been filled by the sliding in of the banks, which caused the water to rise and cover the trees for some twenty-five miles above. The Indians have the tradition that it occurred when there was a fight between Mount St. Helens and Mount Hood. The banks are still sliding, but the current of the river carries away the earth, so that at present the river remains the same.

An essay of ores was read by Prof. Whitney, made by a distinguished French chemist, now resident in Peru, South America. The Professor also stated that the fossils found in the Andes in that region would be sent to this city for description, instead of to France, as heretofore. A specimen of coal was presented by Maj. Lyon, from the mines in Weber Cañon, near Salt Lake, who made a few remarks on the geology of the region where it occurs. The coal strata are about nine feet thick. Coal is also found at Beaver City, some 300 miles south of Salt Lake City.

Some interesting conversation was had on the newspaper accounts of the supply of gold which the French Emperor was supposed to have obtained secretly from Africa, and Captain Burton's theory of the gold to be found there, and his efforts to secure patronage to explore those regions.

The Society contemplate a field excursion as soon as the weather shall be thought settled.

## Artificial Ice.

## THE MANNER AND COST OF ITS MANUFACTURE.

Much attention has been paid, of late years, to devising ways and means for the artificial production of ice, on a scale of economy which will admit of successful competition with its natural production, where much cost is necessarily added for transportation and storage. Investigation and experiment, in this direction, seem to have recently been brought to its utmost limit of economy; and large amounts of artificial ice are now made, not only in warm latitudes, and at long distances from any natural supply, but even in the very midst of those localities where the greatest amount and purest of natural ice can be most advantageously obtained. Even in the city of Cleveland, Ohio, where the purest ice, several feet in thickness, is formed every winter within the city limits, it is found to be more economical to produce ice by artificial means, as it is wanted, than to obtain it from the lake in the winter, and store it away for summer use. The cost of handling and storage; the inconvenience of having it in irregular blocks, and the inevitable loss from melting, more than counterbalances the difference between the ultimate cost of the artificial and the natural product.

Various devices have long been known to chemists for obtaining low degrees of temperature; but those which are employed in the laboratory are quite too expensive for the commercial production of ice. Among the various compounds for producing an intense artificial cold, we may mention the following:

Three parts of sulphate of soda, and five parts of nitrate of ammonia, pulverized and mixed with four parts of nitric acid, diluted with seven parts of water, will produce a degree of cold represented by 45 degrees of Fahrenheit—below the freezing point of water. Three parts of sulphate of soda, pulverized and mixed with two parts of nitric acid, and diluted with seven parts of water, will produce a temperature of 38 degrees of Fahrenheit—below the freezing point. Five parts of sal ammoniac (chloride of ammonia), and five parts of saltpeter, pulverized and mixed with sixteen parts of water, will give a temperature 18 degrees below freezing. The cheapest preparation which will produce any very considerable degree of cold, without the addition of ice or snow, is a mixture of equal parts of sulphate of soda and sulphuric acid, the latter diluted with two parts of water. The cold produced will be four degrees below the freezing point.

There are various other compounds which will produce a low degree of temperature; but, as already stated, they are serviceable only on a small scale, in the laboratory, where the item of expense is not taken into account.

Artificial ice, as a commercial product, is produced in two ways—one by means of the vaporization of exceedingly volatile fluids, such as ether, ammonia, etc.; and the other by the expansion of common air, which has been previously compressed.

## THE VAPORIZATION PRINCIPLE

Consists in extracting the heat from water, by means of the rapid evaporation of ether, ammonia, naphtha, etc., and in so doing reducing the temperature of the water sufficiently low as to cause its rapid refrigeration. Students of chemistry are familiar with the lecture-room experiments illustrative of the great degree of cold produced by the rapid evaporation of fluids. Ether and ammonia, by reason of the readiness with which they are made to vaporize, have generally been employed in the manufacture of ice. Any of the lighter hydrocarbons—such as chimogene, benzine, naphtha, etc., or hi-sulphido of carbon would answer the same purpose. More or less danger, however, is inevitably connected with the use of all the above named fluids, with perhaps

the exception of ammonia, from the readiness with which they burn or explode when coming in contact with the atmosphere at even a very low degree of heat. Numerous accidents have occurred from their use.

The principle of the use of either of these fluids is the same; but the mechanical contrivances by which that principle is applied, are quite various. The object of the experiments alluded to at the outset of this article, has been to devise some simple, ready and effective means to render the use of this principle safe, and at the same time to save the evaporating fluid from escaping from the machine. Machines have consequently been devised by which, when the evaporating fluid is vaporized, it is conducted into another part of the machine where it is condensed, and subsequently brought back, to be again vaporized, and make the refrigerating process continuous. By the use of these machines this process can thus be repeated *ad infinitum*, without losing any of its ammonia, etc., so long as it remains in order—and such a machine will last a long time. None of the agents employed come in direct contact with the water which is to be frozen.

In the use of these machines, fuel and power are required to promote evaporation, to handle the water and ice, and to manipulate the machine. It is stated that an ether machine is in operation in Cleveland, Ohio, which will produce ice at a cost of a fraction less than \$3 per ton. Ten tons are said to be the daily product of this machine, at the following cost:

Two cords of wood.....	\$10 00
One engineer.....	3 00
Two firemen.....	3 00
Contingent expenses.....	10 00
Cost of ten tons of ice.....	\$26 00

These figures, converted into San Francisco prices, will not much, if any, exceed \$4 per ton, or about 18 one-hundredths of a cent per pound—about half the cost of delivering natural ice, by the cargo, at any point in this city. The annual consumption of ice in San Francisco does not vary much from 1,000 tons; which is retailed at five cents per pound. The profits of such an enterprise would allow a large margin in our figures. The cost of such a machine to supply this market, apart from the necessary power to operate it, will cost \$6,000 in Paris, where alone they are manufactured.

## THE USE OF COMPRESSED AIR.

The dangers and difficulties attendant upon the above mode of manufacturing ice, induced certain scientific gentlemen, some fifteen years ago, to set about devising some substitute for the use of ether, etc. One Dr. Gorrie, acting upon an idea derived from some experiments which had previously been made by Gay Lussac, on the great amount of cold consequent upon the sudden expansion of compressed air, constructed an apparatus in New Orleans, in 1851, which would freeze water exposed to condensed air, in the act of being allowed to suddenly expand to its normal condition. The experiment was pronounced a complete success.

A similar set of experiments were made about ten years later, in 1862, in England, and reported to the British Association, where they were illustrated by diagrams, etc., and elicited much commendation. An apparatus was constructed for the manufacture of ice on a large scale, which, for ought we know, is in operation to this day. The machine was reported to be an extraordinary success; being operated night and day without intermission, and without trouble. The cost of the apparatus, without power, was about \$3,000.

The principle of this mode of obtaining ice may be described as follows: If we enclose a quantity of air in a strong vessel, into the top of which we fix a piston, as in the ordinary syringe, and force the piston down with the hand, we shall compress the enclosed air, which, by the power so exerted will be heated. Now, if we cool that air down to its original temperature, and allow

it to suddenly force the piston back, the air, by the consequent expansion, will have its temperature still farther and greatly reduced. The greater the density employed, the greater is the cooling effect. The effect of this cooling on water placed in contact therewith, can readily be conceived. To render such a machine practicable, the compression or heating operation, and the expansion and cooling, must be done in separate compartments. The air, when compressed, should be surrounded by cold water, to extract the heat generated by the compression; and the water to be frozen should be surrounded by a strong brine, which may be cooled to a low temperature without freezing, in order to extract the heat from the pure water to be frozen.

One great mechanical difficulty in the way, has been the devising of some means to readily extract the heat generated by the compression, before the air comes in contact with the brine to be cooled by the expansion of the compressed air. The accomplishment of this object in such a manner as to render the process convenient and economical, has been the study of many scientific minds. The well known principle of Stirling's refrigerator and inspirator, composed of wire gauze, has generally been employed to that end. The reservoir into which the compressed air has been forced, is divided into two compartments, separated by several layers of fine wire cloth, so that the air, in passing from the first or hot compartment to the cold one, warms the wire cloth and is itself cooled, while the cold air, in returning, is gradually warmed, cooling the wire in its course.

What appears to be a decided improvement over this arrangement of compartments separated by wire cloth, has been put into our hands by a gentleman of this city, who is taking the necessary steps to patent the same. This arrangement consists in cooling the compressed air by passing it through copper tubes immersed in water, much after the manner of a steam condenser. We have a rough sketch of the plan, which we are authorized to submit to the inspection of any party who may have in view the idea of embarking in the manufacture of ice, or of machines for accomplishing that purpose.

DELICATE MANUFACTURE.—The manufacture of steel fuse watch chains is carried on extensively at Hants, England. So delicate is this manufacture, that young girls with delicate touch are chiefly employed in the final manipulations. Each chain is about eight inches long, and contains upwards of 500 links riveted together! The chain is not thicker than a horse hair, and the separate links can just be perceived with the naked eye. These chains have been manufactured at that locality for about 100 years; and modern invention has not yet been able to devise a substitute for this chain—equal to it in slenderness, strength and flexibility.

The delicate work which the human hand is capable of producing, exceeds, by far, anything which can be accomplished by machinery. The finer woven fabrics of the East are the work of human fingers alone. Those who are engaged in producing the finest, are never allowed to do any other class of work, in order that the delicateness of their fingers and their nicety of touch may not only be kept at its highest standard, but also cultivated to its utmost limit.

CRANBERRIES.—Mr. James Creighton, of Placerville, El Dorado county, writes us that he ordered some four or five hundred cranberry plants from Maine, last winter. He set them in a piece of ground which had been "mined out," and afterwards filled up. Although set out late, they did well, until a rush of water and tailings from above covered them, and destroyed all but about a dozen. Not disheartened, Mr. C. has ordered another lot, which are already on the way. He has not a doubt that they will do well in California.



## Mechanical.

## Firth's Steel Works, Sheffield, England.

Iron, in its various forms, is universally admitted to be the most wonderful and the most useful of all the mineral productions of the earth; and when it is converted into the form of steel, we have the very concentration of everything that is excellent in that invaluable metal. The manufacture of steel is a most skillful operation, and it is only from the very best ores of iron that really good steel can be produced. The town of Sheffield, in England, may be looked upon as the birthplace of steel, in extensive, merchantable quantities. With one or two unimportant exceptions, that town still supplies the entire amount of British steel which finds its way so universally over the civilized world. Berlin, it is true, has its Krupp, whose monster establishment is a worthy rival of the famous Yorkshire establishments. Nearly all the trade of Europe, outside of Sheffield, is concentrated in the hands of that renowned producer. The works of Krupp are considerably larger than those of any other similar establishments, several of which approach very nearly in extent to that of the renowned German. Each and all of these English works have their special excellencies, and each and all of which are busy and energetic competitors with each other. Most probably the superiority of British steel is owing to this very fact. There is nothing like competition to sharpen the wits.

Among the Sheffield works there is one, not so well known, perhaps, in this country as one or two other firms in that town, but which, nevertheless, is inferior to none in the excellencies, both general and special, of its manufactures. Thomas Firth & Sons, of Sheffield, is a firm whose resources are truly national in character, and which has sometimes been called the "Krupps" of England.

Their steel works, alone, occupy eight and a half acres of ground, densely covered with workshops, which, with their machinery, is valued at \$1,000,000. On the opposite side of the street from these steel works, is located their extensive works for cannon, shot and shell, locomotive and rail-car wheels, wire for telegraph cables, mines, etc. These works cover an area but little short of the neighboring steel works. In addition to these, they have also large water-power works, located at several convenient river points near town; besides still other works for the manufacture of puddled steel and iron for the building of ships, railway carriages (iron railway carriages are becoming quite common in England), bridges, telegraph posts, etc., etc. They also carry on extensive file making works.

This firm produces all the steel which the Royal Arsenal converts into guns, and most of the 7, 8 and 9-inch steel guns of the Royal Navy, as well as the famous Woolwich 300 and 900 pounders. The two largest steam-hammers in the world are to be found in these works—the anvil block of the largest of which weighs 175 tons, and was moved into its place from the pit where it was cast by jack-screws—a sixteenth of an inch at a step! The rolling works are graded for turning out plates from the heaviest armor down to the thinnest plates for crinolines and steel pens—the latter being rolled out with polished, chilled iron rollers, kept constantly as bright as plate-glass mirrors.

The high reputation which the steel of this house has attained, is due to the great care and special knowledge devoted to the "conversion" process. Much of this knowledge and experience is kept a secret from the world. The attention devoted to this particular branch of the business is the basis of the success attained by these unequalled works.

This business was originally founded by two brothers, with their father as the head. Three other brothers have since been taken

into the firm, each of whom presides over a particular department, while the whole is under the energetic and skillful direction of the older brother, Mark Firth.

It is interesting, once in a while, to pass in brief review some of the most important establishments of other localities and other countries than our own; to the end that such descriptions may act as stimulants to our own people to strive also to arrive at prominence, and acquire fame as well as fortune, in being the representative men of their class and calling. We learn also that the steel of this firm is now being quite extensively introduced into this city, and from the perusal of the above it may be interesting to some of our readers, while they are appreciating the superior quality of their manufactures, to be able at the same time to form a just estimate of the magnitude and character of the works whose products they are employing.

**CHECKING HEADWAY.**—It has been stated in the *Steam Shipping Journal* that a 3,000 ton steamship, with 800-horse engines, has been checked, when running at full speed, her engines reversed and steam-way gathered, within three times her own length or 1,000 feet. It was recently stated in the *Railroad Gazette* that a brake had been invented which would bring a railroad train from full speed to a stand-still, in sixteen seconds of time.

**RESTORING FIBROUS TEXTURE TO IRON.** It has been said that railway axles, and other constructions of iron, subject to jarring, which often become weak after a few years' use, as is supposed from a change of their fibrous structure to crystalline, may have their fibrous condition restored by heating and gradually cooling them.

**BOILER IRON.**—A correspondent of the *Scientific American* very properly suggests that a series of experiments, to ascertain the tension strain of the boiler iron manufactured at the various manufactories in this country would be of vast importance. It would well reward the owners of steam boilers to pay three times the price for good iron instead of bad. Under such circumstances the manufacturer ought to warrant the tensile strength of his iron. If found wanting attach the penalty.

**TRUEING GRINDSTONES.**—J. G. Garland, of Maine, and John King, of Conn., both send to the *Scientific American* similar instructions for trueing grindstones when first hung and also when worn out of round. The plan, which is as follows, appears to be feasible: In the same frame with the stone to be used suspend another—a nearly worn out stone will do—so that the faces shall run together. The small stone has a cam on one end of the shaft and journals longer than the boxes so that it has a traverse across the face of the larger stone. The faces of the stones are adjusted by right and left screws for setting up the boxes of the razing stone.

**MECHANICS' INSTITUTE.**—An adjourned meeting of this association was held on the evening of March 18th. The committee appointed to confer with the owners of the new market building, reported that the said building could not be had for fair purposes. After some debate on the question of erecting a temporary building, it was finally resolved that the Institute hold a fair in August or September, 1868, and that the Board of Directors be instructed to secure a suitable location.

The new building of the Institute will be formally opened on the evening of Tuesday, March 26th. A general invitation to be present is extended to members and friends. Hon. Nathan Porter will deliver the Inaugural Address, and Hon. Frank Soule a poem. These proceedings will commence at eight o'clock P. M., in the lecture hall on the first floor.

**GASTON'S SCREW AMALGAMATOR.**—Three of these pans were shipped on the 16th instant to Placerville, El Dorado county. They are intended to be used for working the tailings of the old Pacific mill.

## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, new and important inventions also, the list of Patent claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**IMPROVED FIRE LADDER AND HOSE CARRIAGE.**—One of the latest improvements in aid of the arduous and important duties of our metropolitan firemen, has recently been devised by Mr. George K. Foster, of this city, and consists of a combination of ladder and hose carriage, so constructed and operated, that upon its arrival at the scene of conflagration, a ladder, with one or more firemen, each with an independent hose and pipe, can be almost instantly elevated to the third or fourth story of a building, and that, too, without any communication whatever with the building itself, or any other structure than that connected with the ladder and carriage itself. While this is being done the lower portion of the hose can be connected with the hydrant or engine, and a stream of water be at once thrown directly into an upper story window or upon the roof; or the ladder may be as readily inclined to the building to allow the firemen to enter through a window and convey his pipe directly to the locality of the fire.

The device is a most ingenious application of machinery to the purposes described. In the first place we have a four-wheeled truck, from the frame of which a series of jointed ladders is made to rise, exactly after the manner of the device known as "lazy-tongs," being worked by two winches, one on each side of the truck frame. The ladders are jointed, like carpenter's rules, and when the truck is passing to or from a fire, or remaining at rest in the engine house, they lie flat and close on the top of the machine. They are secured and braced by "lattice bracing," so that each joint supports and strengthens every other joint. As they rise, they are made to carry up one or two lengths of hose, and when up, a fireman can readily ascend and descend at pleasure, or he can be carried up with the ladder as it is elevated.

Two segmented wheels are so connected with the ladder that it may be readily inclined forward to or back from the building to an angle of about 45 degrees, or it may be thrown from the building on one side of the street to the other without moving the truck. By this arrangement it may also be readily adjusted to the second or fourth story of a house. Proper stays are attached to give greater firmness to the ladder when raised; and when it is necessary to reach a great height, guy-ropes may also be added. Reels for any desirable length of hose are attached to each side of the truck. The entire machine is a very ingenious piece of mechanism, and well adapted to the purpose for which it is designed. It is highly approved of by our present eminently practical chief engineer, F. E. Whitney, and indeed by all who have examined it. The model on exhibition is a beautiful and highly finished piece of work, and is from the Vulcan Forge Machine Shop, on Sutter street, between Sansome and Montgomery. It will be on exhibition at the opening of the new Mechanics' Institute building, on Tuesday and Wednesday evenings next, after which it will be deposited, for the present, at the office of the Chief Engineer, on Kearny street, near Bush. A patent for this invention has been allowed through the agency of this office.

**ADAMS' HYDRAULIC PRESSURE WHEEL.** This wheel is constructed on a principle quite unlike any other with which we are conversant. The wheel itself is built very much after the form of an ordinary water wheel, but of small diameter. The water as it comes from the penstock, or ordinary water pipe, is conducted into a segmental, hydraulic trough, fixed to the frame-work of the wheel, and so constructed as to pass under the periphery of the wheel for nearly half its circumference; the face of the wheel forming the upper covering of the trough. The wheel, of course, as it revolves, must form a continuously moving water-tight joint with the two upper edges of the trough. The buckets are made like those of a common stream wheel; but so constructed as to be drawn back within the circumference of the wheel, except when that circumference is in contact with the trough. As the buckets pass into the trough, they are successively thrown out by the force of the water itself, acting through a pipe and piston ingeniously contrived for that purpose. There

is a pipe and piston for each bucket. The instant the face of a bucket passes the water-gate at the entrance into the trough, the bucket itself is thrust out into the stream, filling an entire section of the trough, and of course taking the full head of the water until it has passed to the other extremity of the trough. Here it is drawn back, so as to avoid coming in contact with the end-piece of the trough, and retains its contracted position until it once more arrives at the gate. So with each bucket in succession. It will thus be seen that by this device a considerable leverage is obtained—proportioned to the diameter of the wheel—in excess of hydraulic wheels of ordinary construction. The wheel is quite simple, and the inventor is confident of its practical success. A working model may be seen in charge of Mr. J. H. Stockman, over Garratt's Brass Foundry, on Fremont street. A model may also be seen at this office. A caveat for this invention has been filed through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. The inventor resides near the Clipper Mills, Butte county.

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**GOLD QUARTZ MINE, SITUATED IN CALAVERAS** County, with steam mill fitted up with Amalgamating Pans, etc., FOR SALE. The mine has three main veins, and more than \$80,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 635 Clay street, San Francisco. 23v13-6m

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**Every Variety of Shafting,**  
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Steamboat Shafts, Cranks, Pistons and Connecting Rods, Car and Locomotive Axles and Frames.  
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**Soft Steel Wire Rope**—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities), suitable sheaves and blocks furnished when required.

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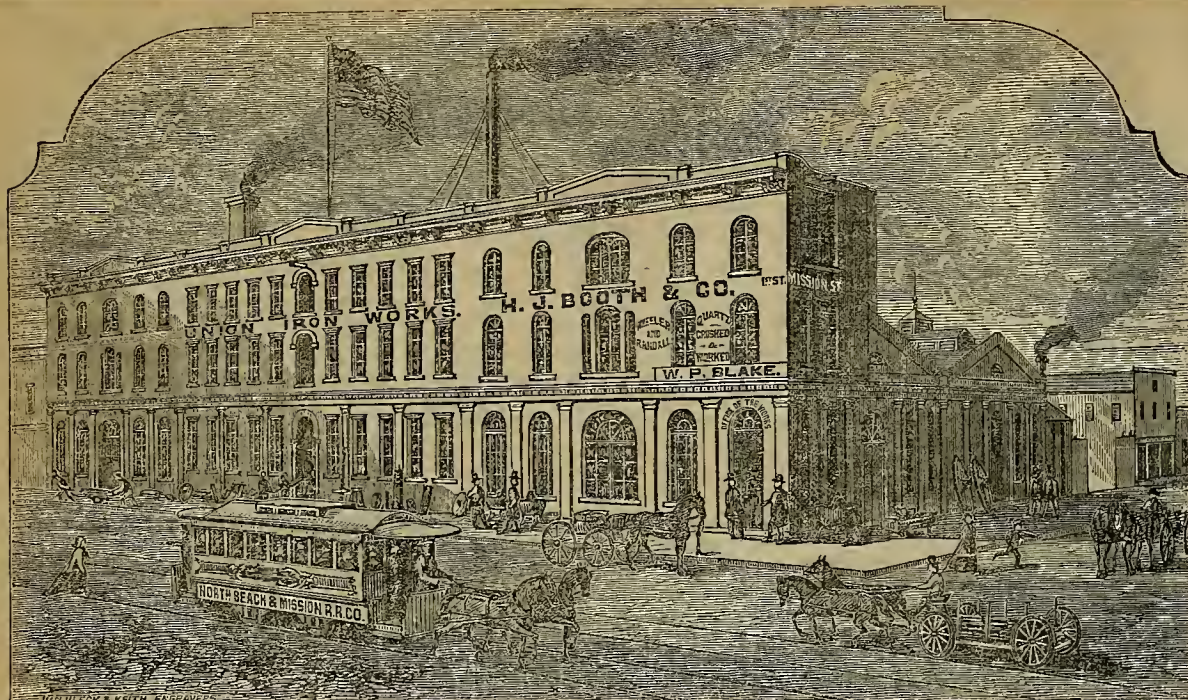
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WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.Genuine White Iron Stamp Shoes and Dies  
Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-1fWILLAMETTE IRON WORKS,  
PORTLAND, OREGON.Steam Engines, Boilers,  
SAW AND CRIST MILLS,  
MINING MACHINERY, WROUGHT IRON SHUTTER  
WORK, AND BLACKSMITHING IN GENERAL.Corner North-Front and E streets,  
18v13-1y One block north of Couch's Wharf.UNION IRON WORKS,  
Sacramento.

MANUFACTURERS OF

STEAM ENGINES, BOILERS,  
And all kinds of Mining Machinery.Also, Hay and Wine Presses made and repaired  
with neatness, durability and dispatch.Dunbar's Patent Self-Adjusting Steam Piston  
PACKING, for new and old Cylinders, manufactured  
to order.Front Street, between N and O streets,  
14v11 SACRAMENTO CITYJOHN WRIGHT,  
Pick Manufacturer,No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.Has always on hand a general assortment of PICKS for  
Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE  
QUARTZ PICK, which is especially adapted to Quartz Min-  
ing, and guaranteed to give good satisfaction. 19v13-yGEORGE T. PRACY,  
MACHINE WORKS,  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.STEAM ENGINE, FLOUR AND SAW MILL  
And Quartz Machinery, Printing Presses,—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND  
REPAIRED.

Special attention paid to Repairing. 24v12

## SAN FRANCISCO

## Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

## Marine and Stationary Engines

Quartz Machinery, Saw, Flour and Sugar Mills, Mining  
Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

Wine, Cider, Cotton and Tobacco Presses  
of the latest Improved Patterns.

## STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and  
Dies warranted to be made of the best white iron.Dunbar's Improved Self-Adjusting Piston-  
Packing, requires no springs or screws; is always steam-  
tight; without excessive friction, and never gets slack or  
leaky.MACHINERY, OF ALL DESCRIPTIONS  
Bought, sold, or exchanged. Bolt Cutting and Castings at  
the lowest market rates.

6v11-1y DEVOE, DINSMORE &amp; CO

## GLOBE

## Foundry and Machine Shop,

STOCKTON, CAL.

## KEEP, BLAKE &amp; CO.,

MANUFACTURERS OF

Quartz, Saw and Grist Mill Irons, Steam  
Engines, Horse Powers,Mining and Irrigating Pumps, Car Wheels, Derrick Irons,  
House Fronts, Iron Fencing, Balcony Railings, etc.,  
at San Francisco prices. Orders solicited  
and promptly executed. 13v13-1y

LEWIS COFFEY.

J. S. ALBION

LEWIS COFFEY & RISPON,  
Steam Boiler & Sheet Iron Works.THE only exclusively Boiler Making establishment on the  
Pacific Coast owned and conducted by Practical Boiler  
Makers. All orders for New Work and the repairing of Old  
Work, executed as ordered, and warranted as to quality.  
Old Stand, corner of Bush and Market streets, opposite  
Oriental Hotel, San Francisco.

## V. CUSHING, Agent

For the Purchase and Shipping of Machinery  
OF ALL KINDS.SPECIAL ATTENTION GIVEN TO QUARTZ MILL  
Machinery and Findings, and Miners' Material of every  
description. Being a PRACTICAL MACHINIST, and div-  
ing my personal attention to the execution of orders, I can  
guarantee the BEST class of work at the LOWEST PRICE  
in the city. Office, No. 120 Front street, San Francisco.  
8v14v11J. O. HANSCOM & CO., (T. PENDERGAST,  
H. S. SMITH, W. W. HANSCOM.

## Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

Practical Machinists and Iron Founders,

MANUFACTURE

## STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Re-  
quires no springs or screws; is always steam-tight; without  
excessive friction, and never gets slack or leaky.

## HANSCOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else  
Wheeler & Randall's New Grinder and  
Amalgamator.

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use.  
Send for one of our circulars, giving full tables.All Wheels warranted to give the power as set forth, or  
the money will be refunded.Sole makers for this coast of the "Pendergast  
White Iron Stamp Shoes and Dies.None genuine unless obtained from us. Every one war-  
ranted.  
Patented Machinery of all kinds will be furnished by us  
at market prices. Particular attention given to drawings  
and specifications of machinery, which will be made to  
order. The patronage of the public is respectfully solicited.  
13v12

## FULTON

## Foundry and Iron Works.

## HINCKLEY &amp; CO.,

MANUFACTURERS OF

## STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mis-  
sion street, San Francisco. 3-4yNEPTUNE IRON WORKS,  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

## MARINE

Locomotive,

And all kinds of

HIGH PRESSURE

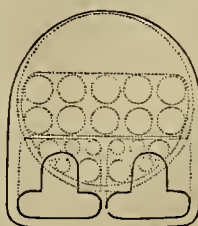
Steam Boilers

MADE.

All Boilers guaranteed and  
tested by U. S. Boiler In-  
spector before sent out of  
the Shop, at Shop expense.All kinds of Sheet Iron and  
Water Pipe, Coal Oil  
Stills, Wrought Iron  
Worms, etc., etc.  
Manufactured to Order.

Old Boilers Repaired

D. CAMERON.



6v12-1y

A NEW SEARCH FOR AN OPEN POLAR SEA.  
Mons. Gustave Lambert, a member of the  
French Geographical Society, has projected an  
expedition, the object of which is to  
reach the open Polar Sea. He believes that  
the existence of great currents running north  
and south in high latitudes, can only be  
explained on the hypothesis of such a sea.  
He prefers the route by the west coast of  
Nova Zembla. He says "the route is staked  
out by the monsters of the deep;" alluding  
to the whales, which, when steadily pursued  
northward, run for the Polar Sea.

ROLLS FOR ROLLING MILLS.—Letters pat-  
ent, says the *London Colliery Guardian* of  
Jan. 26th, have been granted to Mr. Caleb  
Thomas Hill, of Pelsall, iron molder, for  
"improvements in the manufacture of rolls  
for rolling metals." These rolls are ordi-  
narily made of cast iron, the roll with its  
necks and ends for coupling being cast in  
one piece. This invention consists in mak-  
ing them with an axis of steel or case-hard-  
ened iron, upon which axis the roll is cast.  
By this method the rolls are made much  
stronger than as ordinarily manufactured,  
and a commoner kind of iron can be em-  
ployed. The axis is supported in the mid-  
dle of the sand or other mold, and the iron  
is cast upon or around it. The roll is  
turned and finished in the ordinary manner.

THE annual coal product of Pennsylvania  
is worth as much as the annual gold product  
of the Pacific States.

## TOWNE &amp; BACON,

## Book and Job Printers,

Have the Largest Office,

Do the most work,

And do it better

Than other offices

In this City,

536 Try them

With a Job,

And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,

Over Pacific Fruit Market.

## CITY IRON WORKS COMPANY.

P. CLERC, B. KLEINCLAUS, W. BESSIE.

## CLERC &amp; CO.,

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.

9v146m

## CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL kinds of Brass, Composition, Zinc, and Babbitt Metal  
Castings, Brass Ship Work of all kinds, Spikes, Sheathing  
Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and  
Gears of superior tone. All kinds of Cracks and Valves, Hy-  
draulic Pipes and Nozzles, and Hose Couplings and Con-  
nections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 24v13-1y

V. KINGWELL J. H. WEED.



## JAMES MACKEN,

## COPPER SMITH,

No. 226 Fremont st., bet. Howard &amp; Folsom

All kinds of COPPER WORK done to order in the best

manner. Particular attention paid to Steamboat, Sugar

House and Distillery work.

Repairing promptly and neatly attended to. 13v11

## JOHN LOCHHEAD'S

## Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT

to order—Marine, Stationary, or Locomotive.

## HOISTING AND PUMPING ENGINES,

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland

navigation is called to the

## Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San

Francisco for the last fourteen years, and enjoys the re-  
putation of having built ONE HUNDRED AND SEVENTEEN

STEAM ENGINES.

Screw Propellers of all kinds, and Steam Boat Machinery,  
generally, made to order, and warranted to give perfect  
satisfaction in every particular. 25v12-3m



**A TERRIBLE DEATH.**—A musician belonging to one of the French regiments has just met with an extraordinary death at Vera Cruz. He was engaged to play at a ball, and being very thirsty went out into the garden, and finding a water bottle on the terrace, took it up and drank freely. Suddenly he raised cries of agony, and upon assistance arriving, it was found that an enormous centipede had fixed its mandibles in his throat. The animal had taken up his abode in the neck of the bottle, and was washed into his mouth in the act of drinking. A surgeon who was called was obliged to cut it to pieces, but the poison from the bite caused death in a few hours.

**FLOATING ISLANDS.**—The inhabitants of the celestial empire construct immense bamboo rafts, on which a layer of earth is spread, and this being planted, soon forms a vast field covered with vegetation. The man erects his tent in the center, and then trusts himself with his family to the waters. This moving oasis usually drifts about at the mercy of the winds, but if required to be directed, is provided with masts and sails, or with cables and anchors for rendering it stationary. An island is to be built after this style upon the Seine, as one of the curiosities to be seen the coming season at the Paris Exhibition.

THERE are about 2,000 persons at the Maloe gold mines, Canada, among whom are many Californians. No person is allowed to mine without a Crown gold lands license or private license, which costs one and two dollars per month. The excitement is abating.

#### To Owners of Copper Mines and Smelting Works.

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for Smelting Copper. Address "W," care of Mining and Scientific Press. 5v141f

**B. F. HOWLAND,**  
PHOTOGRAPHER,  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Pearls, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cards de Visites only \$25 per dozen; Vignettes at \$1 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v141m

**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or Superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Residence—W. W. Noyes, 525 Clay street, San Francisco. Humboldt City, Nevada. 6v141f

### The Mercantile Gazette

—AND—  
**PRICES CURRENT,**

**E. D. WATERS & CO., Prop'rs.**

E. D. WATERS, Sen. T. F. CROMBIE. J. H. CARMANY.

Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only

**Commercial Paper**  
**ON THE PACIFIC COAST.**

PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

#### THE LETTER SHEET PRICES CURRENT

For enclosure in letters, is also published every  
STEAMER DAY.  
13v131f

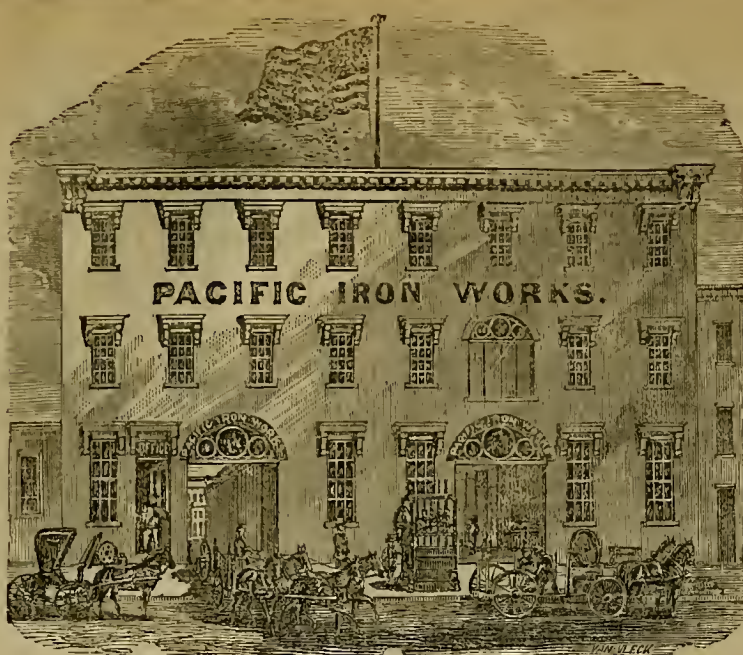
**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices, varying from \$1.50 to \$2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
21v12  
F. E. WEYGANT, Proprietor.



### THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Green Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

**GODDARD & COMPANY.**

### ROWLAND, WALKER & CO., GROCERS,

Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits.  
22v131y

**NEW YORK PRICES.**

**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory  
prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES,**  
A large assortment of Gold Chains  
and Jewelry. 25v10 6m

**WATCH REPAIRING AT NEW YORK PRICES.**

**NEW YORK PRICES.**

### REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.  
**PRICES REDUCED!**



These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Guns—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Case. All the new models for sale very low.  
12v131f

**ALBERT E. CRANE.**

**Economy in Advertising.**—The Mining and Scientific Press is the best and most economical mining advertising medium in this city. Our terms are less than one-half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains, proportionally, a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.

### NATIONAL Insurance Company!

OF SAN FRANCISCO.

Office, No. 403 Montgomery street,  
(Near California).

**MARINE INSURANCE.**—Upon Hulls, Cargoes, Treasure, Commissions, Profits, and other subjects of Marine Insurance, to and from all Ports in the world, including Inland Risks.

**FIRE INSURANCE.**—Upon Buildings, Merchandise, Furniture, Rents, Vessels in Port and their Cargoes, and other Insurable Property.

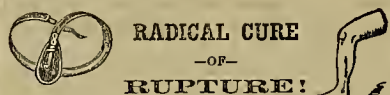
Capital (Paid up) --- \$1,000,000.

Losses promptly adjusted and paid in United States Gold Coin.

**WILLIAM PIERCE,** President. **D. W. C. THOMPSON,** Vice-President.  
**W. W. WIGGINS,** Secretary. **A. NOYES,** Marine Officer.

#### EXECUTIVE COMMITTEE:

**Albert Dibblee,** Chairman. **Joseph A. Donahue,**  
**R. G. Sneath,** Secretary. **John G. Bray,** 22v13 4m



**DR. A. FOLLEAU**  
Has his studios and manufactures in the same building. Every kind of Apparatus, Trusses, orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
8v13-1y11p

**MEUSSDORFFER,**  
Nos. 625 and 637 Commercial Street,  
WILL INTRODUCE  
On Saturday, February 9, 1867,  
An Entirely New Style of  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA."  
Which are the most dressy hat ever introduced on the Pacific Coast.  
8v14

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Which are the most dressy hat ever introduced on the Pacific Coast.  
8v14

### Baldness! Baldness!!

CAN BE PREVENTED, BY USING

### Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

**W. E. MAYHEW, Druggist,**  
N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13 6w

#### REPORT

—OF THE—

### COMMITTEE

—ON—

### SEWING MACHINES!

California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

#### FOR GENERAL FAMILY USE

—THE—

### "FLORENCE"

—IS—

#### "THE BEST."

(Signed)

**J. N. ANDREWS,**  
**THOMAS C. MCMALE,**  
**L. ELKUS.**

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

**SAMUEL HILL,**  
General Agent, 111 Montgomery street, San Francisco.  
17v13

### GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant, attached for ladies and families, where persons can board for one-half they are required to pay at hotels. SANBORN & CO. 17v13 6m

### Attention! Attention! Attention!

#### Look to Your Health in Time!

**HEALY'S RHEUMATIC LINIMENT, FOR THE SURE** and speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the greatest Remedy of the age. Are you afflicted with Rheumatism?

Have you the Headache? Use Healy's Rheumatic Liniment!  
Have you a Sore Throat? Use Healy's Rheumatic Liniment!  
Have you the Toothache? Use Healy's Rheumatic Liniment!  
Are you subject to Cramps? Use Healy's Rheumatic Liniment!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. L. L." is stamped on the cork, and the fac simile of HEALY'S signature on the outside wrapper of the bottle.

Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drugists and Grocers. Price, \$1. 21v14 1p



### STANDARD SOAP COMPANY'S WASHING POWDER,

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for using in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 207 Commercial street, San Francisco. 15v12q

### Blanks, Blank Mining Books, Constitution and By-Laws

—FOR—

### Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the  
**Mining and Scientific Press.**

Orders from the Interior faithfully attended to.





OF MILWAUKEE.

OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1867, \$113,176.26.  
SACRAMENTO REFERENCE.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14qtrfcl2p

## Professional Cards.

**SHERMAN DAY,**  
Mining Engineer,  
No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
224\*

**FREDERICK MANSELL,**  
Mechanical & Architectural Draftsman,  
No. 422 California street, corner of Leidsdorff.  
Drawings of Works made for parties applying for pa-  
ents at Washington or London. mar23-t.

**GREGORY YALE,**  
Attorney and Counsellor at Law,  
No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opiunous prepared  
upon all questions relating to Mining Laws. 1v14-lur

**JAMES M. TAYLOR,**  
Attorney and Counsellor at Law,  
COURT COMMISSIONER, appointed by the Fourth District  
Court, COMMISSIONER OF DEEDS for Nevada  
and Massachusetts,  
Court Block, San Francisco.  
Entrances opposite City Hall, Merchant street, and 636  
14v11t

**W. E. GOLDSMITH,**  
Card and Seal Engraver,  
505 Montgomery street, up-stairs, (over Tucker's.)  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

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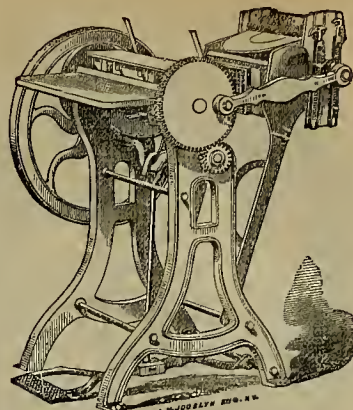
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ESTABLISHED [MAY, 1860.]

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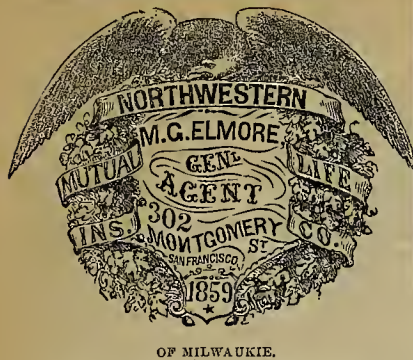
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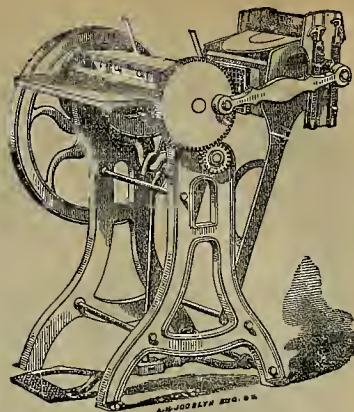
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the Pacific coast where every mining enter-  
prise that is worth naming is, from time to  
time, noticed, as its merits may warrant. A  
mining enterprise on the Pacific coast, which  
is not referred to in this journal, in some  
way or other, as often as once in three or  
four months, is certainly one which people  
in the Atlantic States should beware of.  
Our advice to people at the East is never to  
venture small amounts in mining. If you  
must start small, let a number of such club  
together, so as to make the aggregate amount  
to be invested, such as may be worth your  
while to inquire into. Jan. 1, 1867.

ESTABLISHED] [MAY, 1860.

### VOLUME FOURTEEN

—OF THE—  
**Mining and Scientific Press,**  
COMMENCING JANUARY, 1867.

**DEWEY & CO., Publishers.**

Issued every SATURDAY, at our Book and Job Printing  
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tablished, and enjoys one of the largest and most permanent  
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Governments cannot be over-rated, and the Proprietors of the  
Press, feeling the responsibility which rests upon them, and  
the reward which must follow the faithful performance of  
their trust, will take care to afford inventors every advan-  
tage to be secured to them through a competent and re-  
sponsible agency upon this coast.

### TO VICTIMS OF RHEUMATISM IN ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH  
this terrible and excruciating disease, that the means  
of a sure, speedy and permanent cure are within the reach  
of every sufferer, by using

**RICHARDS' REMEDY!**  
For Inflammatory, Chronic, Hereditary and Mercurial  
Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all  
the modifications of the disease, whether confined to one  
portion of system or erratic in their character. Composed  
wholly of VEGETABLE EXTRACTS, it exterminates the  
complaint without injuring the constitution. None but the  
TORTURED SUFFERERS who have been relieved from their  
torment by the operation of this remedy, can realize the  
ecstasy which the mere cessation of long-continued tor-  
ment imparts. Sleep returns, strength returns, health and  
happiness return to the pain-worn and debilitated patient, and  
once cured, nothing but the grossest imprudence can lead  
to a relapse. The confidence with which these statements  
are made to the public, is the result of many years' ob-  
servation and experience. The reputation of mere pallia-  
tives soon dies out, but that of a STERLING MEDICINE,  
which produces, year after year, in all cases, those benefi-  
cial effects, NEVER DIES. This has been the history of  
Richards' Remedy. Try it!  
Richards' Remedy is for sale by  
**H. BOWMAN,** Druggist, Sacramento,  
And by Druggists generally.



## New Mining Advertisements.

## Enalla Mining Company, State of Guerrero, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 20th day of February, 1897, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm. Buehn.....	bal 263	50	\$25 00
Wm. Buehn.....	bal 264	50	25 00
Wm. Buehn.....	bal 265	50	25 00
Wm. Buehn.....	bal 266	50	25 00
Wm. Buehn.....	bal 267	50	25 00
Wm. Buehn.....	bal 268	50	25 00
Wm. Buehn.....	bal 269	50	25 00
Wm. Buehn.....	bal 270	50	25 00
Wm. Buehn.....	bal 271	50	25 00
Wm. Buehn.....	bal 272	50	25 00
Wm. Buehn.....	bal 273	50	25 00
Wm. Buehn.....	bal 274	50	25 00
Wm. Buehn.....	bal 275	50	25 00
Wm. Buehn.....	bal 276	50	25 00
Wm. Buehn.....	bal 277	50	25 00
Wm. Buehn.....	bal 278	50	25 00
Wm. Buehn.....	bal 279	50	25 00
Wm. Buehn.....	bal 280	50	25 00
Wm. Buehn.....	bal 281	50	25 00
Wm. Buehn.....	bal 282	50	25 00
Wm. Buehn.....	bal 283	50	25 00
Wm. Buehn.....	bal 284	50	25 00
Wm. Buehn.....	bal 285	50	25 00
Wm. Buehn.....	bal 286	50	25 00
Wm. Buehn.....	bal 287	50	25 00
Wm. Buehn.....	bal 288	50	25 00
Wm. Buehn.....	bal 289	50	25 00
Wm. Buehn.....	bal 290	50	25 00
Wm. Buehn.....	bal 291	50	25 00
Wm. Buehn.....	bal 292	50	25 00
Wm. Buehn.....	bal 293	50	25 00
Wm. Buehn.....	bal 294	50	25 00
Wm. Buehn.....	bal 295	50	25 00
Wm. Buehn.....	bal 296	50	25 00
Wm. Buehn.....	bal 297	50	25 00
Wm. Buehn.....	bal 298	50	25 00
Wm. Buehn.....	bal 299	50	25 00
Wm. Buehn.....	bal 300	50	25 00
Wm. Buehn.....	bal 301	50	25 00
Wm. Buehn.....	bal 302	50	25 00
Wm. Buehn.....	bal 303	50	25 00
Wm. Buehn.....	bal 304	50	25 00
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Wm. Buehn.....	bal 306	50	25 00
Wm. Buehn.....	bal 307	50	25 00
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Wm. Buehn.....	bal 309	50	25 00
Wm. Buehn.....	bal 310	50	25 00
Wm. Buehn.....	bal 311	50	25 00
Wm. Buehn.....	bal 312	50	25 00
Wm. Buehn.....	bal 313	50	25 00
Wm. Buehn.....	bal 314	50	25 00
Wm. Buehn.....	bal 315	50	25 00
Wm. Buehn.....	bal 316	50	25 00
Wm. Buehn.....	bal 317	50	25 00
Wm. Buehn.....	bal 318	50	25 00
Wm. Buehn.....	bal 319	50	25 00
Wm. Buehn.....	bal 320	50	25 00
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Wm. Buehn.....	bal 329	50	25 00
Wm. Buehn.....	bal 330	50	25 00
Wm. Buehn.....	bal 331	50	25 00
Wm. Buehn.....	bal 332	50	25 00
Wm. Buehn.....	bal 333	50	25 00
Wm. Buehn.....	bal 334	50	25 00
Wm. Buehn.....	bal 335	50	25 00
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Wm. Buehn.....	bal 361	50	25 00
Wm. Buehn.....	bal 362	50	25 00
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Wm. Buehn.....	bal 365	50	25 00
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Wm. Buehn.....	bal 367	50	25 00
Wm. Buehn.....	bal 368	50	25 00
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Wm. Buehn.....	bal 372	50	25 00
Wm. Buehn.....	bal 373	50	25 00
Wm. Buehn.....	bal 374	50	25 00
Wm. Buehn.....	bal 375	50	25 00
Wm. Buehn.....	bal 376	50	25 00
Wm. Buehn.....	bal 377	50	25 00
Wm. Buehn.....	bal 378	50	25 00
Wm. Buehn.....	bal 379	50	25 00
Wm. Buehn.....	bal 380	50	25 00
Wm. Buehn.....	bal 381	50	25 00
Wm. Buehn.....	bal 382	50	25 00
Wm. Buehn.....	bal 383	50	25 00
Wm. Buehn.....	bal 384	50	25 00
Wm. Buehn.....	bal 385	50	25 00
Wm. Buehn.....	bal 386	50	25 00
Wm. Buehn.....	bal 387	50	25 00
Wm. Buehn.....	bal 388	50	25 00
Wm. Buehn.....	bal 389	50	25 00
Wm. Buehn.....	bal 390	50	25 00
Wm. Buehn.....	bal 391	50	25 00
Wm. Buehn.....	bal 392	50	25 00
Wm. Buehn.....	bal 393	50	25 00
Wm. Buehn.....	bal 394	50	25 00
Wm. Buehn.....	bal 395	50	25 00
Wm. Buehn.....	bal 396	50	25 00
Wm. Buehn.....	bal 397	50	25 00
Wm. Buehn.....	bal 398	50	25 00
Wm. Buehn.....	bal 399	50	25 00
Wm. Buehn.....	bal 400	50	25 00

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of February, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the eighth day of April, 1897, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

MAX BURCKHARDT, Secretary.  
Office, Room No. 1, Crim House, No. 83 Kearny street, San Francisco, Cal. m23

## Gold Quarry Company, Location of Works: Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of March, 1897, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, (room No. 4) No. 706 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of April, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth day of May, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.  
Office, Room No. 4, 706 Montgomery street, San Francisco, Cal. m23

## Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fifteenth day of February, 1897, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Gordon, John.....	48	75	\$112 50
Gillespie, Henry.....	19	87	55 50
Gallagher, James.....	50	100	150 00
Hearst, George.....	54	216	414 00
Lehmann, Christian.....	24	6	9 00
Macpherson, A. W.....	26	239	449 50
Vandervoort, J. C.....	23	50	75 00

And in accordance with law, and an order of the Board of Trustees, made on the fifteenth day of February, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Thursday, the eleventh day of April, 1897, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco, Cal. m23

## Nuestra Señora de Guadalupe Silver Mining Company. Location of Works: Tayoltita, San Dimas District, Durango, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of March, 1897, an assessment, No. 26, of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, E. J. PFEIFFER, at the office, No. 210 Post street, or to the Treasurer, A. H. KENNEDY, at his office, No. 637 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of April, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the fifth day of May, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco, Cal. m23

## Rattlesnake Gold and Silver Mining Company, Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1897, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 318 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of April, 1897, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth day of May, 1897, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOISE, Secretary.  
Office, 318 California street, San Francisco, Cal. m23

## Salamanca Gold and Silver Mining Company. Location of Works: Leon's Ranch District, Calaveras County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the eleventh day of February, 1897, the several amounts set opposite the names of the respective shareholders, as follows:

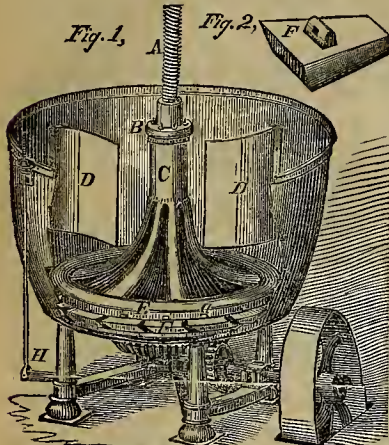
Names.	No. Certificate.	No. Shares.	Amount.
H. Burdett.....	214	105 5-19	\$50 14
Thos. Carr.....	221	105 5-19	52 64
Jerem. Dwyer.....	193	105 5-19	52 63
Chr. Dunker.....	19	10	5 00
Chr. Dunker.....	21	5 5-19	2 00
Thos. Dunham.....	98	34	15 00
Thos. Dunham.....	241	20	10 00
M. C. Farley.....	233	10	5 00
P. D. Gallagher.....	131	10	5 00
P. D. Gallagher.....	235	10	5 00
Marshall Gibbons.....	87	20	10 00
John Heron.....	19	2 00	5 00
A. R. Hill.....	205	5 00	10 00
Mary Jones.....	205	20	10 00
Wm. Jackson.....	209	10	5 00
Mrs. Jane Jackson.....	134	5 00	10 00
B. Kouns.....	22	10	5 00
Mrs. Maggie Lameroux.....	29	10	5 00
Jas. H. Morgan.....	30	10	5 00
Jas. H. Morgan.....	31	10	5 00
Jas. H. Morgan.....	32	10	5 00
Jas. H. Morgan.....	35	10	5 00
Jas. H. Morgan.....	37	5	2 50
Jas. H. Morgan.....	39	5	2 50
Jas. H. Morgan.....	40	5	2 50
Jas. H. Morgan.....	41	5	2 50
Jas. H. Morgan.....	42	5	2 50
Jas. H. Morgan.....	43	5 5-19	2 50
Jas. H. Morgan.....	44	10 5-19	5 12
Jas. H. Morgan.....	45	5	2 50
Jas. H. Morgan.....	46	5	2 50
Jas. H. Morgan.....	47	5	2 50
Jas. H. Morgan.....	48	5	2 50
Jas. H. Morgan.....	49	5	2 50
Jas. H. Morgan.....	50	5 5-19	2 50
Jas. H. Morgan.....	51	5	2 50
Jas. H. Morgan.....	52	5	2 50
Jas. H. Morgan.....	53	5	2 50
Jas. H. Morgan.....	54	5	2 50
Jas. H. Morgan.....	55	5	2 50
Jas. H. Morgan.....	56	5	2 50
Jas. H. Morgan.....	57	5	2 50
Jas. H. Morgan.....	58	5	2 50
Jas. H. Morgan.....	59	5	2 50
Jas. H. Morgan.....	60	5	2 50
Jas. H. Morgan.....	61	5	2 50
Jas. H. Morgan.....	62	5	2 50
Jas. H. Morgan.....	63	5	2 50
Jas. H. Morgan.....	64	5	2 50
Jas. H. Morgan.....	65	5	2 50
Jas. H. Morgan.....	66	5	2 50
Jas. H. Morgan.....	67	5	2 50
Jas. H. Morgan.....	68	5	2 50
Jas. H. Morgan.....	69	5	2 50
Jas. H. Morgan.....	70	5	2 50
Jas. H. Morgan.....	71	5	2 50
Jas. H. Morgan.....	72	5	2 50
Jas. H. Morgan.....	73	5	2 50
Jas. H. Morgan.....	74	5	2 50
Jas. H. Morgan.....	75	5	2 50
Jas. H. Morgan.....	76	5	2 50
Jas. H. Morgan.....	77	5	2 50
Jas. H. Morgan.....	78	5	2 50
Jas. H. Morgan.....	79	5	2 50
Jas. H. Morgan.....	80	5	2 50
Jas. H. Morgan.....	81	5	2 50
Jas. H. Morgan.....	82	5	2 50
Jas. H. Morgan.....	83	5	2 50
Jas. H. Morgan.....	84	5	2 50
Jas. H. Morgan.....	85	5	2 50
Jas. H. Morgan.....	86	5	2 50
Jas. H. Morgan.....	87	5	2 50
Jas. H. Morgan.....	88	5	2 50
Jas. H. Morgan.....	89	5	2 50
Jas. H. Morgan.....	90	5	2 50
Jas. H. Morgan.....	91	5	2 50
Jas. H. Morgan.....	92	5	2 50
Jas. H. Morgan.....	93	5	2 50
Jas. H. Morgan.....	94	5	2 50
Jas. H. Morgan.....	95	5	2 50
Jas. H. Morgan.....	96	5	2 50
Jas. H. Morgan.....	97	5	2 50
Jas. H. Morgan.....	98	5	2 50
Jas. H. Morgan.....	99	5	2 50
Jas. H. Morgan.....	100	5	2 50

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of February, 1897, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Balcer & Chapman, No. 312 Montgomery street, San Francisco, Cal., on Wednesday, the tenth day of April, 1897, at the hour of 1 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. It is the miller plate, P the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 25v11

## HUNTER'S IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor, 22v13-3m San Francisco.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery by the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the **PACIFIC FOUNDRY,** San Francisco. 1v1

## Steam Pumps,

FOR ORAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco. 23v12 3m

## BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1886.

THESE FURNACES ARE NOW MANUFACTURED AFTER AN IMPROVED mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

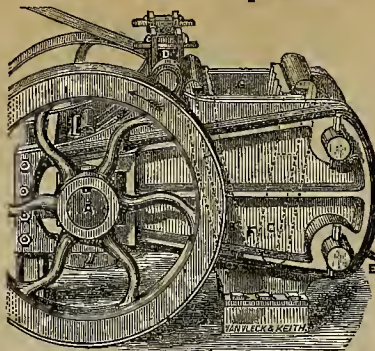
May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

T. KALLENBERG,

19v12 416 Market street, San Francisco.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully called to this improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:  
No. 1.—Or 6-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2.—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....\$850  
No. 3.—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening of the jaw, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county:

RAWHIDE RANCH, Tuolumne Co., Sept. 28, 1886.  
JAMES BRODIE, Esq., San Francisco.—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, Supt. Rawhide Ranch Quartz Mill. R. P. JOHNSON.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, 1884. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that after the 1st of November, 1886, the royalty charged for using the same will be raised to the sum of \$100 per Barrel. A diagram, with explanations of this machine, will be found in the Mining and Scientific Press, of September 29th, 1886.

**BRODIE'S PATENT WINDMILL SEPARATOR FOR ORE CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 29th, 1886. **BRODIE & RADCLIFFE,** Express Building, 402 Montgomery street, San Francisco. 12v13d

## Foundry for Sale.

A One-half Interest in the

## UNION IRON WORKS,

SACRAMENTO,

Owned by William B. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 35 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address **WILLIAM B. WILLIAMS,** Sacramento, Cal. 25v13d19-19p

## Notice to Miners, Well-Borers and Water Companies.

**M. PRAG** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG, 8v13-1y Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER! PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. F. BLAKE,

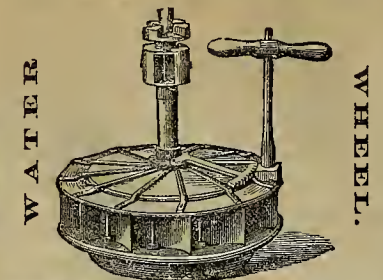
Corner First and Mission streets, or Box 2,077 3v13f SAN FRANCISCO.

## Brown's Filtering Heater!

FOR PREVENTING INCrustation IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to **AUSTIN A. WELLS,** Agent. 5v14-1y

## LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALLED AND UNRIVALLED IN THE United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular to **KNAPP & GRANT,** Agents for California. 26v13-1yq 310 Washington street, San Francisco

## To Quartz Miners and Others.

### NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

### HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m JAMES HITCHENS.

## STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator, has double

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission. Ores, in lots not exceeding 2,000 pounds, tested by 22v13 G. W. STRONG, Assayer.

## STEAM HOISTING APPARATUS.

A Handley 15-Horse Power

## PORTABLE ENGINE.

With V Friction Hoisting Gear, 4-foot Drum,

LATEST IMPROVEMENTS,

Has been used for a month,

For Sale Cheap!

On account of previous purchaser who suspended work

**TREADWELL & CO.,**

Corner Market and Fremont streets, San Francisco. 10v14-1m

## NELSON & DOBLE,

AGENTS FOR

**Thomas Firth & Sons' Cast Steel Files,** Etc., Shear, Spring, German, Flow, Blister and Toe Calk Steel; manufacturers of

**Mill Picks, Sledges, Hammers, Picks,** Stone Cutters', Blacksmiths' and Horse-Shoers' Tools, 319 and 321 Pine street, Between Montgomery and Sansome, San Francisco. 10v14q

## FOR SALE!

**PATENT RIGHT OF HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

**E. O. HUNT,**

28 SECOND STREET,

11v24 San Francisco.

## Nitro-Glycerin!

WE ARE INFORMED THAT CERTAIN PERSONS ARE offering to use the famous and well known Nitro-Glycerin, used for Explosions in Oil Wells, Blasting or other purposes.

This is to notify the public that the United States Blasting Oil Company is the sole owner of the Nobel Patents for manufacturing Nitro Glycerin, and for exploding the same; and that any and all infringements of the Company's rights will be prosecuted in law.

The Company is now prepared to supply any desired quantity of the best quality of Nitro-Glycerin to the public with instructions how to use it and avoid accidents. Orders to be addressed to **JAMES OBEVAU,** Secretary, 32 Pine street, New York.

**T. P. SHAFNER,**

President U. S. Blasting Oil Company, 32 Pine street, New York. 11v14-1m

## Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Ophthalmia, Warts, Swollen and Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Laue Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 234 Sacramento street, opposite What Cheer House, San Francisco. 10v14-1y

A SINGULAR CASE.—The following is from a Milwaukee, Wis., journal, of Jan. 29th: 'Several months since a number of young men, belonging to the city, were in a saloon, drinking. They were evidently feeling very well from the excitement of stimulants, and were exhibiting feats of gymnastics, when one of them, a young German named Wilder, declared that he had strength sufficient in his fist to knock through one of the stout panels of the door. Before his comrades could interfere, Wilder struck the door, forcing the panel completely. The blow bruised his knuckles considerably, but not so seriously as it was thought, breaking the flesh and making them bleed. The hand was also bled. Nothing was thought of the matter at the time, the hand was done up and the party separated. The numbness in Wilder's hand continued to increase. He experienced no pain, but a dead feeling, as if the hand had gone to sleep, as he expressed it. In a few weeks the hand began to wither and the fingers to shrink up, and now they present a curious appearance. The hand is wholly useless, and of a dead looking gray color, as if no blood circulated in it, and has shrunk to nearly one-half the size of the other hand. The nails are black, but still retain their hold upon the flesh. They have not grown any since the blow was given. Upon cutting the hand, a little blood will stand in the wound, but it does not bleed like a fresh cut. There is no sign of mortification in the hand. The dead feeling reaches only a few inches up the arm. Wilder has no power over the hand, and cannot close it. The bones of the fingers seem to have shrunk with the flesh, and to have softened to a substance resembling gristle. Several surgeons have examined the hand and declare that they never saw nor heard of a case similar to this. The hand and arm are watched carefully, and if signs of the numbness are discovered spreading, as they are now, amputation will be performed.'

**MINING SUIT.**—Samuel Adams has brought suit in the Twelfth District Court against his partners in the Delphi claim, Kern county. He charges that on December 12th, 1865, defendants Maraschi and McKeadney took possession of the mines and worked them so unskillfully as to cause a loss to the company of \$20,000; that the value of the whole mine is \$80,000; that since November 23d, 1864, 1,129 tons of rock have been taken out, valued at \$85 per ton; that not only false returns have been made from the proceeds, but that defendants have willfully permitted much gold to remain in the tailings, that they might wash them over again for their own benefit. According to the complaint, the mining and crushing expenses ought not to exceed \$15 per ton. The defendants' total yield is put down at only \$5,535, when, as complaint alleges, the mine has yielded \$50,000. Plaintiff prays for a partition and division by referee, that the property be sold, account taken, defendants restrained, receiver appointed, etc.

**LIMITED BUT GOOD.**—Two strangers, supposed to be from the east and believed to be "capitalists," as well from their manners as from the fine quality of their "store clothes," strolled over Lander Hill examining various mining operations. Coming to a certain mine, where there was but one man at work, they stopped for a moment to observe the superior character of the preparations for extensive mining. A spacious and clean face had been cut on the hillside, which afforded a platform of generous dimensions at the mouth of the tunnel, which had been commenced and driven in a few feet. The handsome job seemed to be the result of a combination of capital and skill. They asked the solitary workman—who, by the way, is of small size, but of good stuff—the name of the company and its capital stock. Resting on his pick, the plucky little fellow replied: "I am the company, gentleman; and my capital stock is a couple of sacks of flour, a side of bacon, a strong will, good health and a quiet conscience."—Reese River Reville, March 2d.

**TAXIDERM.**—Immense numbers of deceased poodles are stuffed every year in New York, in the highest style of the art, for their bereaved mistresses, by those who make taxidermy a profession. The price is fifteen dollars.

**DON'T PAY.**—The expense of working the copper mines near Santiago de Cuba, including cost of transportation of the ore, no longer admits of profitable competition with other mines. They will therefore be abandoned.



**THE USE OF INSECTS.**—Darwin says that flowers have become through natural selection conspicuous in contrast with the greenness of the leaves, that they might be easily observed and visited by insects, so that their fertilization might be favored. I have come to this conclusion from finding an invariably rule that when a flower is fertilized by the wind it never has a gaily colored corolla. Again, several plants habitually produce two kinds of flowers; one kind opened and colored so as to attract insects; the other closed and not colored, destitute of nectar, and never visited by insects. We may safely conclude that, if insects had never existed on the face of the earth, the vegetation would not have been decked with beautiful flowers, but would have produced only such poor flowers as are now borne by our firs, oaks, nut and ash trees, by the grasses, by spinach, docks and nettles.

**ANOTHER AVALANCHE** has occurred on the Donner Lake road, near the Summit. Thirteen men were buried, of whom ten were recovered alive.

### Perry Davis' Vegetable Pain Killer.

The Great Family Medicine of the Age! Pain Killer, taken internally, should be adulterated with milk and water, and sweetened with sugar if desired, or made into a syrup with molasses. For a Cough, a few drops on sugar eaten will be more effective than anything else. For Sore Throat, gargle the throat with a mixture of Pain Killer and water, and relief is immediate and the cure positive. It should not be forgotten that the Pain Killer is equally as good to take internally, as to use externally. Each bottle is wrapped with full directions for its use. Please read the printed directions.

Sold by all Medicine Dealers everywhere. 9v14-1m

### Allen's Lung Balsam

Is warranted to break up the most troublesome Cough in an incredibly short time. There is no remedy that can show more evidence of its merits, than this Balsam, for curing Consumption, Coughs, Colds, Asthma, Croup, etc. To Physicians—Physicians having consumptive patients and having failed to cure them by their own prescriptions if they desire to try Allen's Lung Balsam, by writing to the proprietors they will send a formula which will enable them to judge whether the ingredients are of a superior compound or not. The medicinal properties are extracted by a chemical process. The apparatus by which some of them are extracted cost many thousands of dollars. Dr. H. P. Mackinnon, Dentist, Office No. 131 West Sixth Street, Cincinnati, states as follows: Gents—About one year ago I took a cold which settled on my lungs. A violent cough was the consequence, which increased with severity. I expectorated large quantities of phlegm and matter. During the last winter I became so much reduced that I was confined to my bed. The sickness was attended with cold chills and night sweats. A diarrhoea set in. My friends thought I was in the last stages of consumption, and could not possibly get well. I was recommended to try ALLEN'S LUNG BALSAM. The formula was shown to me, which induced me to give it a trial, and I will only add that my cough is entirely cured, and I am now able to attend to my business as usual. P. MEREDITH.

Sold by all Medicine Dealers everywhere. 9v14-1m

### MELLVILLE C. KEITH, M. D.

Homeopathic Physician,  
No. 25 Montgomery st., opposite the Lick House, (Room 12),  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and CHRONIC DISEASES. Consultation free. 18v14-6mnr

### JACOB SHEW,

Pioneer Photographer,  
612 Clay street, north side, four doors above Montgomery.  
(Late 315 Montgomery street.)  
Takes all kinds of Photographs in the best style of the Art. He would invite special attention to the new "Cabinet Photographs," which he is taking to perfection. 10v14-1r

### [WOODWARD'S GARDENS!

**MUSEUM.**  
Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.  
Open Every Day!  
ADMISSION:  
To all parts of the Garden.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
These Gardens are accessible by the Howard, Folsom and Market street Cars.  
Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13-1r

### California Steam Navigation COMPANY.

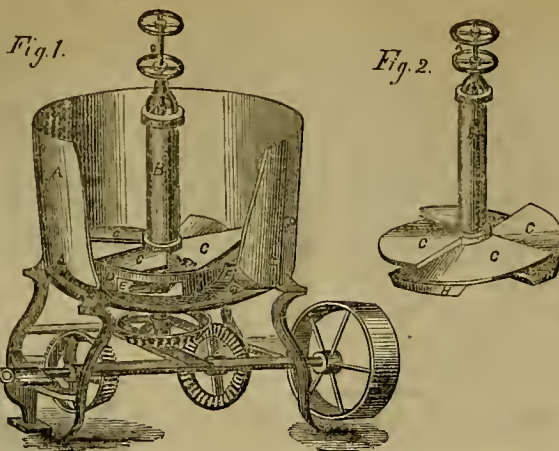
Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPELIS.....CAPT. A. FOSTER  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY  
" JULIA.....CAPT. E. CONKLEIN  
One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Chico and Red Bluff.  
Steamships AJAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.  
Office of the Company, northeast corner of Front and Jackson streets.  
B. M. HARTSHORNE,  
President.  
13v12

### Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF THE Nervous System and Reproductive Organs, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

## Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and Fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immenso pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14-1qr

Stair Work of all kinds,  
MADE TO ORDER

And Shipped to all parts of the Coast.



Newel Posts and Balusters  
CONSTANTLY  
On Hand and for Sale.

### PACIFIC POWDER MILL

COMPANY'S

### BLASTING POWDER!

MANUFACTURED

IN MARIN COUNTY,

CALIFORNIA.

FOR SALE BY

### HAYWARD, COLEMAN & CO.,

AGENTS,

414 Front Street, San Francisco.

3v14-1m

### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

### Illuminating, Lubricating,

### PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning out.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 1v13-3m1r 414 Front street, San Francisco.

### Job Printing Press for Sale—\$250.

A Largest Size (half medium) RTUGGLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to DEWEY & CO., Mining and Scientific Press Office.

### JOHN TAYLOR & CO.

IMPORTERS,

AND DEALERS IN

### ASSAYERS' MATERIALS,

Druggists' & Chemists' Glassware,

Photographic Stock, Etc.

512 and 514 Washington Street,

SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

### ASSAY AND BULLION BALANCES,

And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast.

A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand. San Francisco March 6, 1885. 11v10-1r

### WE ARE NOW OFFERING

### OUR IMMENSE STOCK

### Fine Custom Made Clothing

Gents' Furnishing Goods

AT PRICES THAT DEFY COMPETITION.

Our Stock of Clothing Consists of

### ALL THE LATEST STYLES

BOTH OF MATERIAL AND FINISH.

A Large Assortment of

Trunks, Valises, Carpet Bags, Blankets, Etc.,

AT EXTREMELY LOW PRICES.

J. R. MEAD & CO.,

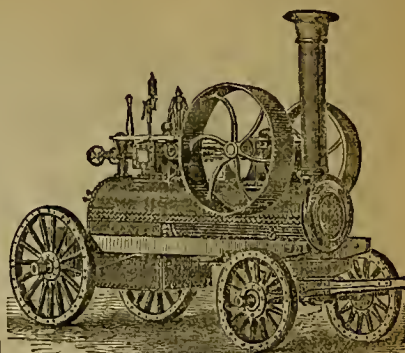
Cor. of Washington and Sansome streets.

8v10

ELECTROTYPING CUTS, ENGRAVINGS, Etc.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

## Portable Steam Engines!

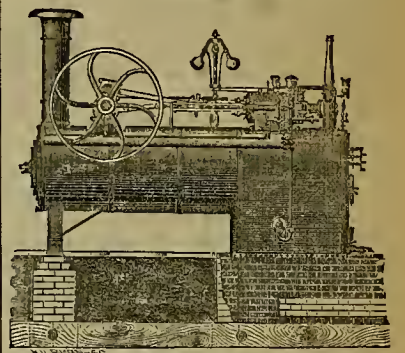
"Hoadley's" and "Hittinger's" Make.



HOADLEY'S.

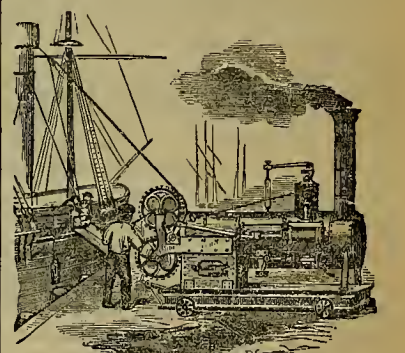
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

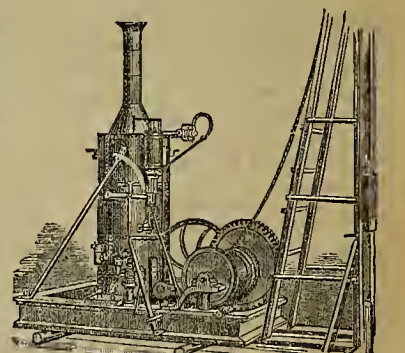
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world. All sizes on hand from 3 to 30 horse power, with and without carriages. Also, Portable Saw and Grist Mills. For sale by TREADWELL & CO., Corner of Front Market and streets. 9v14-6m15p



**OLYMPIC CLUB EXHIBITION.**—This took place on the evening of the 15th inst. The elite of San Francisco were present. Many very remarkable feats of agility and of strength were performed. Some of them were as extraordinary as any efforts of the Japanese acrobats, which elicited such applause a few weeks since. Among them, is especially to be mentioned that of Mr. G. H. Strong, who balanced a 30-foot ladder upon his upturned feet, while a boy of six or seven years climbed it, and indulged in various gyrations at the top; also that of Mr. W. S. Lawton, whose brilliant performance upon the swinging perche was universally admired. Tumbling, sparring, the club exercise, the horizontal bar perche, and the trapéze, formed part of the evening's entertainment. All agree in pronouncing the feats executed as fully equal to those of professional athletes. Yet these were done by men who are occupied throughout the greater part of every day with their duties as clerks, merchants, artists and mechanics; who have connected themselves with the club, partly from the love of such athletic exercises, and partly for the sake of the physical benefit to be derived from them.

Physical training is beginning to be recognized as an important branch of education. This is as it should be. Unquestionably it is, in reality, as essential to the completion of the perfect man, as intellectual or moral training. "*Mens sana in sano corpore.*" There can be no perfect mental health, unless in connection with perfect bodily health. The emotional, the intellectual, and the physical man, are so intimately associated together—so intertwined, as it were—that any derangement of either, involves a disturbance of the whole human economy. Perfect health consists in perfect harmony between these. Each, then, should be regularly and appropriately exercised.

We hardly know to what perfection the muscular system can be brought. Of course only those who devote their attention solely to this sort of training, can become perfect as acrobats. Life is too short to allow any man to attain perfection in everything. We shall never see a Daniel Webster with the strength of a Winship, the suppleness of D'Evani, and the agility of a Blondin. Yet, by means of proper exercise, judiciously varied, almost any man can preserve that equilibrium between the intellectual, emotional and physical portions of his nature, upon which true health and enjoyment of life depends.

**A NEW BOOK.**—A Roman & Co., of this city, have in press a work by Professor Laynes on the elements of composition, belles-lettres and oratory. The work has been submitted to the examination of the State and County Superintendents of Schools, and to the criticism of several legal and literary gentlemen of this city. All speak of it in the highest terms. It is being printed at the office of the MINING AND SCIENTIFIC PRESS.

**THE PEERLESS GAS BURNER** is the latest invention in that line which we have noticed. The design, which is ornamental as well as useful, consists in arranging three or more gas burners around one of the ordinary silver lined glass globes. The effect is not only beautiful, but the reflection adds greatly to the amount of light thrown out into the room. It is an Eastern invention, and is being introduced into this city by G. D. Hager, No. 559 Market street. One of the burners may be seen at this office.

**COAL.**—We have been shown some mineral coal found on the ranch of Mr. Moody, situated about ten miles west of this city, in the Buttes, near the Colusa road. It is the genuine article, and for California coal, is of a superior quality. An assay made by Mr. F. W. H. Aaron, gave only seven per cent. ash.—*Marysville Appeal, March 20th.*

**MANGANESE.**—The ship Reindeer, now loading for Liverpool, carries thirty-five tons of manganese from Red Rock.

### City Amusements.

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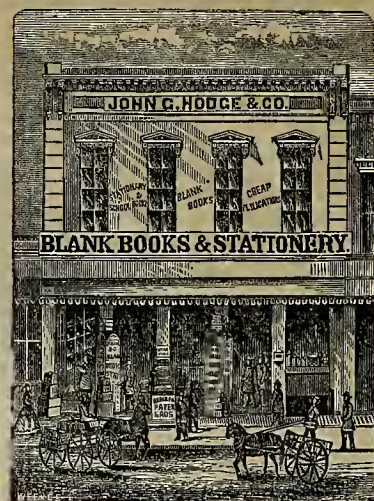
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### Endorsement by the Miners' State Convention

The following resolution was adopted by the California Miners' State Convention, held at Sacramento, Jan. 17th, 1866:

Resolved, That we regard a mining paper or journal of great importance to the mining interest of California, and we recommend the Mining and Scientific Press, of San Francisco, to the consideration and support of the miners of the Pacific coast.

**Important to Californians.**—Many inventors have lately had their claims for Patents seriously (and in some cases fatally) delayed by the unqualification of agents who have not complied with the Government license and revenue laws, as well as other new and imperative regulations. These discrepancies, although arising from the inexperience of honest agents, are none the less dangerous to applicants for patents, whose safest course is to trust their business with none but active and experienced solicitors. THE MINING AND SCIENTIFIC PRESS PATENT AGENCY has strictly complied with the regulations of the Department, and properly filed all necessary papers as Claim Agents.



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SAN FRANCISCO, SATURDAY, MARCH 30, 1867.

VOLUME XIV.  
Number 13.

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## Brown & Level's Boat-Detaching Apparatus.

This eminently useful California invention, for which letters patent were applied for through this office, was first described in the MINING AND SCIENTIFIC PRESS of December 2d, 1865, at which time we gave a full report of the first public trial to which it was submitted. The invention has since attracted much attention at the East, not only on the part of private individuals, but of government as well—several officers of the navy having reported highly of its efficiency and value. What person that has read the reports of the numerous shipwrecks of passenger vessels, particularly of steamers, has not shuddered at the recital of the terrible destruction of human life which has occurred from the launching of boats from vessels in distress; and when it is recollected that those accidents have generally been caused by the imperfect arrangement of the apparatus for disengaging the boats, the importance of any device for remedying this terrible defect in nautical apparatus, must be strikingly apparent. This desirable end is probably as nearly accomplished by Brown & Level's invention, as can possibly be done by human contrivance. The device is simple and infallible in its operation, and not liable to get out of order. So far as we have learned, it has received the unanimous approbation of every seaman who has witnessed its operation. In order that it may be more fully understood, we give the following illustration of the manner of its use:

In Fig. 1 we give a perspective view of a boat as suspended from the davits and falls, A, A. The disengaging apparatus is seen at B, B. The lock that holds it securely in place is seen at P. By raising the latch of the lock and throwing the lever, G, backward, the boat is disengaged from the falls and landed safely and handsomely upon the water. In Fig. 2 we give a sectional view of a boat fitted with this apparatus. A, A are the falls by which it is suspended. C, C are bent levers, which pass through mortises in the central part of B. I, I are shackle hooks that are pivoted in the top end of B, and when engaged are securely held in an eye in the upper end of C. D, D are rods that are connected to the lower end of C, and are operated by the handle and lever, G, which is hung on a pivot at E. By throwing the lever, G, backward or toward the stern of the boat, the rods, D, operate upon the bent lever, C, thereby releasing their shackle-hooks, B, from their confinement in the eye of C, and it will be

## Patent Boat-Disengaging Apparatus.

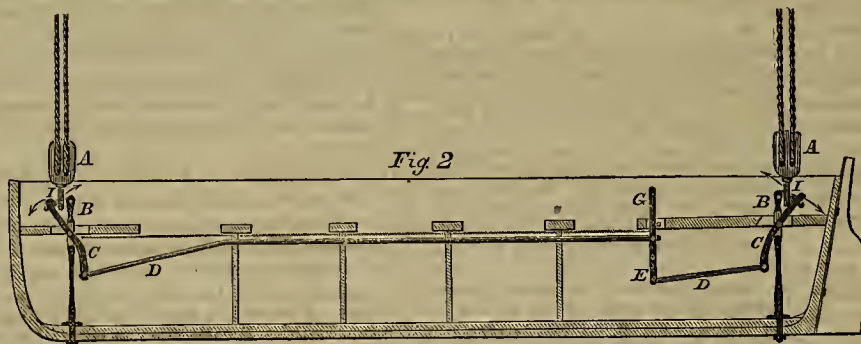
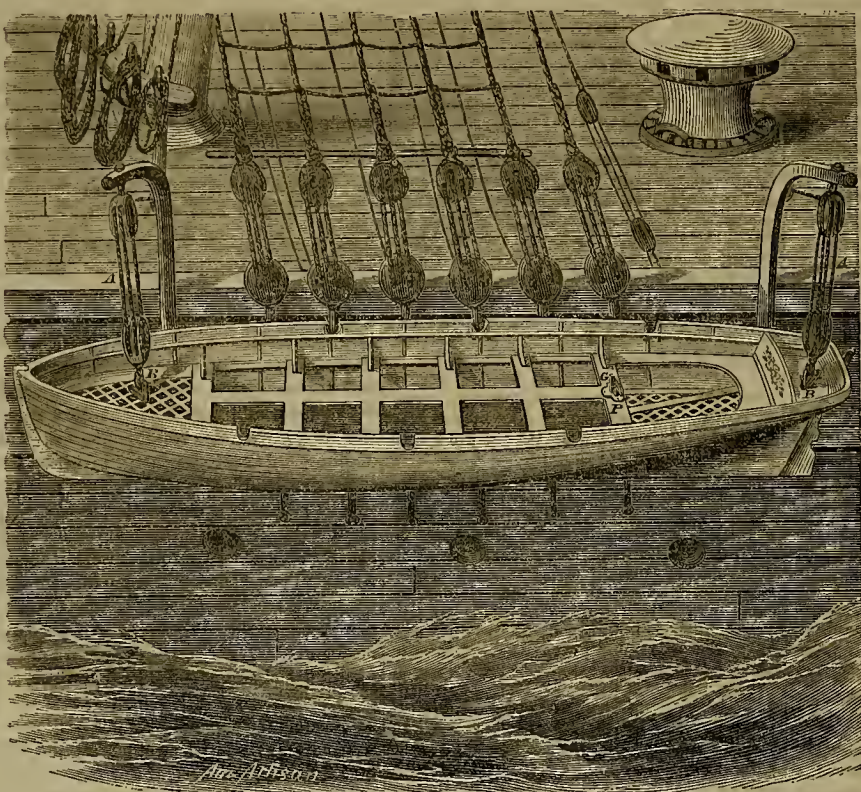
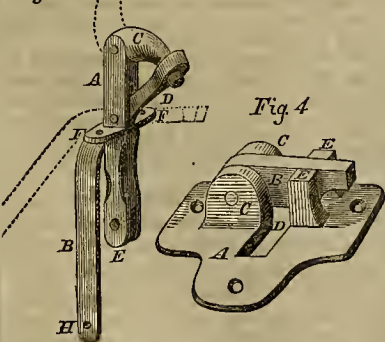


Fig. 3



seen that the hooks of the tackle-blocks are simultaneously disengaged, and the boat with its occupants descends evenly upon the water.

In Fig. 3 is given an enlarged view of the disengaging apparatus. C is the shackle-hook, confined by the eye, D, of the bent

lever, B. A is the bar through the mortise of which the bent lever passes, and is held in place and turns upon a pin passing transversely through it. At E is seen another mortise, by which the apparatus is attached to the keel of the boat by a strong bolt. To give further steadiness and security, two ears are seen at F, through which bolts pass and are held by nuts under the deck-covering of the boat. It will be seen that if the bent lever, B, is thrown into the position as shown in the dotted lines, it will release the shackle-hook, C, from any pressure it may sustain.

The lock by which the apparatus is held in place at the will of the operator, is shown enlarged at Fig. 4. A is a plate bolted securely to a seat in the boat. The latch, B, is hinged at C, and when closed is securely held from any oblique motion by the shoulders or studs, E. At D is seen the mortise or opening in which the arm of the lever, G, Fig. 2, rests, being held in place by the latch. When the boat is to be launched the operator raises the latch, B, throws the lever, G, backward, and by this simple and easy operation the launch is effected.

In attaching the apparatus to boats, no changes of the davits, falls, or of any of the rigging is required to operate them. This is a great saving of trouble and expense, as a boat having the apparatus attached to it can as easily be raised, lowered, and detached from one vessel as another.

This apparatus has been adopted by the United States Revenue Marine, and is unanimously recommended by the Board of the United States Supervising Inspectors of steamboats, at their annual session at Buffalo, October 18, 1866. It is also recommended by the Hon. H. McCulloch, Secretary of the Treasury, and by numerous officers of the revenue service, also by the officers of the Cunard service, Pacific mail steamers, and many others that we have not space to enumerate. It is now being introduced on all of the most important lines of steamers.

The invention was patented by S. Brown and Leon Level, of New York city, (formerly of San Francisco.) The apparatus is manufactured by the "Brown and Level Life-saving Tackle Company."

THE DURABILITY OF SUBMARINE CABLES.—It is said that the submarine cable between Malta and Alexandria, which has now been submerged only about six years, is fast going to decay. It is constantly requiring repairs, which are made by taking up such portions as are found to be faulty, and supplying new sections. The insulating covering is fast becoming decomposed, and the wire itself is in process of rapid disintegration. The same condition of things was found to exist in the Cagliani and Bonah

cable, after it had been down only about two years. The Atlantic cables both have the same, or very similar, protection; and notwithstanding the successful recovery and working of the first one, after it had been down a year, there is much reason to fear that two or three years more may render it totally unfit for use. Perhaps it may be in view of this possible fact, that the directors keep up the high rate of charges; thinking it no more than right that the company should look to a full realization of both interest and principal in three or four years, which the present income bids fair to bring about.

A MISSOURI blacksmith has prepared a horse shoe for the Paris Exhibition, made of raw ore from Iron Mountain. Half the shoe is finished, and the other half shows the ore as it is dug from the mine.

WORM-EATEN WOOD may be saved from further ravages by fumigating it with benzine, whereby the worm is destroyed.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Reduction and Concentration of Auriferous Ores.

BY DR. L. LANSZWEERT.

EDITORS PRESS:—There is an old proverb, that "Prosperity makes friends and adversity tries them;" and although not usually applied precisely as at present, it is thoroughly applicable. Whilst the mines were yielding good returns, enormous quantities of ores were unskillfully reduced, yielding rich tailings. Moreover, large quantities of poor ores were raised and thrown aside, because requiring some special treatment, and these "friends" obtained (but not valued) in prosperity may now be turned to profit in adversity, and it is not unlikely that they will prove a source of profit that will render the mines at least independent of assessment, if they do not enable them to declare large dividends. The number of concentrators which have from time to time been brought forward for treating tailings and this low class of ore is, doubtless, large; but except in isolated instances they are still unused; and now that something is really required to aid the mine and mill adventurer, so fertile a source of profit should certainly not be passed over.

There is room enough for all, and therefore no invention should be condemned until the processes have been fairly tested. The result of any practicable machine will in most cases be a large profit to those who have sufficient confidence to give it a fair trial. The following has been compiled from a report of Mr. H. A. Thompson, for many years connected with the Port Phillip and Colonial Gold Mining Company, Clunes, Australia. The results of his experiments extend over six or seven years, with a view of diminishing the heavy loss of gold now sustained in reducing quartz. These experiments were made at the Port Phillip Company's works, at Clunes, and are the more important, as at that large establishment there is every facility for conducting the trials upon a working scale, while an assay office, attached to the works, allows of every step being tested with such accuracy as alone can make the result obtained reliable.

For this colony assays of tailings from many different gold fields have led to the conclusion that the average loss sustained in crushing is not less than thirty-five per cent.; and several instances have come under notice where there was a large percentage of sulphides in the quartz, where the loss of gold was, in consequence, from fifty to seventy per cent. of the total contents. For convenience, the gold found in mineral veins may be divided into two classes: First, the free gold, meaning that deposited in the quartz or slate in a form rendering it capable of liberation by the ordinary processes of crushing; and, second, the pyritous gold, meaning that deposited with, and enveloped by, the sulphides of iron, copper, antimony and lead; but principally iron in Australia. The greater part of the free gold is deposited in particles large enough to be liberated and retained by the ordinary reducing process; but in all gold-bearing quartz a certain amount of fine gold exists, which cannot be retained by the usual mode of treatment; and in some few exceptional cases the proportion of the fine gold is so considerable as to form nearly one-half of the gold lost. This fine gold, when seen in the quartz, presents the appearance of minute patches of gilding, and must be detached in thin, flat pieces, readily floated away in running water.

A part may be pyritous gold, liberated in the breaking up of the iron ores. For practical working, some of this fine gold must always be lost, even where the greatest care is used; but a large proportion of that now carried away would be retained with the pyrites by any efficient mode of concentrating the latter. The pyritous gold is so

closely incorporated with the iron and other ores, that it cannot be separated by the means used for extracting the free gold. A question has arisen whether this pyritous gold exists in combination with the sulphides or in a metallic state. Experiments made at Clunes, using hyposulphite of soda as the dissolving agent, showed a trace of other than metallic gold in rich pyrites, but none in auriferous antimony ore. For the first class the quantity was evidently so small as to be of no practical importance—nearly all the gold being mechanically deposited with the pyrites. A sample washed from the blankets, in which the particles of pyrites average about 1.1000th of an inch in diameter, gold can be seen on the broken faces in still smaller particles; and it is believed the great bulk of the pyritous gold is in this finely divided state. From ten to forty ounces of gold per ton may be taken as the average yield of the sulphides in paying quartz mines; but both higher and lower yields have been met with.

It is not the sulphides only that exist in the quartz veins that are auriferous. Many of the blue slate beds, at a distance of several fathoms from the mineral veins, contain pyrites in scattered crystals studding the rock. These crystals have been collected, and, on assay, gave from five to fifteen dwts. of gold per ton. This fact may throw some light on the cause of quartz veins being frequently productive above, and poor below the water line—a circumstance usually ascribed to the pyrites being undecomposed below the water. This cause is hardly sufficient to account for the sudden failure of the gold in depth in some cases, and it is possible that the existence of large quantities of undecomposed pyrites, in the adjoining slate beds, may have an impoverishing effect, by holding the gold and preventing its aggregation in the quartz veins.

Hitherto we have only referred to the sulphides found in the quartz or slate; but in the old auriferous drifts of Ballarat, trunks of old trees are found imbedded in the gravel, and on this old timber, pyrites have frequently formed. A beautiful specimen of crystallized white iron pyrites, deposited on a piece of wood taken from a drift immediately below the trap rock, gave by assay forty ounces of gold per ton! In another case where the old trunks were burst open, and only the sulphides formed in the heart of the tree were saved, the yield was over 80 dwts. of gold per ton! Some of the fine dust obtained in working out the gold at the Royal Salmon claim, Ballarat, yielded by assay over fifteen ounces of gold per ton. When placed under the microscope, this dust was seen to be composed of minute crystals of pyrites, aggregated into round pellets, being 1-300ths to 1-100th of an inch in diameter; the surface being roughened by the projecting angles of the crystals, and not water-worn. These results show that the deposition of gold in connection with pyrites has been in operation at a comparatively recent date, and is probably still going on.

To enter into all the details of the researches made, would extend this paper to too great a length; and it will be sufficient to state that in careful trials, including assays of total contents, different modes of amalgamation to ascertain the amount of free gold, and microscopic examinations, indicated that the bulk of the gold lost was enveloped in pyrites. Except in rare instances, not more than one-fourth of the loss being free of gold, and this was usually in small flaky pieces, floated off with the water.

The proportion of the free gold left in the tailings will depend on the fine or coarse particles in which it may have been deposited in the quartz, and also on the more or less perfect character of the means used for retaining it. A small percentage also exists in the form of gold still attached to particles of quartz. As already stated, more than seventy-five per cent. of the gold lost was in sulphides; the separation of the sulphides from the comparatively worthless sand, therefore reducing the bulk of the material to be acted on, and then to extract the gold, is to bring to perfection the several systems of concentration. There is so little difference between the respective specific gravities of the quartz and iron pyrites, that the separation of one from the other in any known machine, even with particles of nearly the same size, would be imperfect; but this difficulty is vastly increased through the pyrites being more friable than the quartz, and therefore broken under the stamps into much smaller particles. This difference in size counterbalances the difference in the specific gravities, where water concentration only is used; thus nullifying the principle on which all the systems of ore dressing in general use are based.

An attempt was made to classify the sand, but it was found that half the gold in the

waste tailings was inclosed in particles of sand and pyrites, in such a minute state of division, that it could be passed through the wire gauze having 3,600 meshes to the square inch; and as it was evidently impracticable to pass 100 tons of sand per day through sieves of this kind, the idea of direct classification was given up. A trial was made on the classifying boxes introduced by Mr. Ulrich, where the coarser sand and heavier sulphides pass out with the water flowing from a lower, and the lighter particles from an upper escape. By this method the sand can be divided into two several different qualities; but the classification is not according to size only, and is therefore imperfect. The coarse particles of pyrites only were returned on the blankets; but the finer pieces floated away, and no dressing machine hitherto tried would retain more than a small proportion of those fine sulphides.

The best result was obtained from the round, concave buddle, with the improvements patented by Mr. Munday; and this machine is now being worked to advantage at Clunes and other places; but it falls far short of the requirements of the case, and the endeavor to discover a better system was in consequence not relaxed. After proving most of the known dressing machines, and many modifications of old plans which it was hoped might overcome the difficulties in the way, without success, a trial was made of the percussion table, a dressing machine much used in Germany and South America.

[Concluded next week.]

[Written for the Mining and Scientific Press.]

## Mill Experiments.

MESSRS. EDITORS:—In your issue of the 16th, you publish an account of some "interesting mill experiments," made at the Pennsylvania mill, Brown's Valley, with tailings. It is stated that tailings from a battery of four stamps, after passing over riffles and copper plates, were fed continuously into a Chile mill with constant discharge—time not given,—no results obtained. That another Chile mill was charged with a batch of ten shovelfuls of sand, which were worked for two hours, and then discharged. The result obtained from twelve such batches (120 shovelfuls) was eight ounces of amalgam. Another was charged in same manner, but worked three instead of two hours, with a result for eight batches of 16 ounces of amalgam—200 per cent. more. Another Chile mill, charged in same way, but worked for four instead of two hours, gave a result of 24 ounces amalgam—300 per cent. more.

We are not advised whether all the tailings thus worked were of the same quality as those supplied for the first experiment. Whether all direct from the battery, or some from a pile. If from a pile, was any precaution taken to obtain them fairly, and of equal value? Or was one run made from the top of the pile, another from the bottom, another near the discharge, another away from it?

In the absence of knowledge as to how those experiments were made, they possess but little interest, and no value to those not interested in the mill, who have the satisfaction of knowing that 260 shovelfuls—equal, probably, to 1½ tons of tailings, the product of about 2½ tons of ore afforded 48 ounces of amalgam—which, at its probable value of \$5 per ounce, would be \$240 for 2½ tons, or \$96 for one ton of ore—a very large result to obtain by any such process. I omit five ounces of amalgam obtained from box outside—they may be spared, but added would show over \$100 a ton.

As the Chile mill is usually employed to work the "blanket washings," after they have passed over riffles of mercury and copper plates, I may be excused for suggesting that the experiments 2, 3 and 4, were probably made with blanket concentrations.

T. M.

We regret, equally with our correspondent, the difficulty of procuring reliable reports of mill and other experiments, with regard to mining. The Brown's Valley experiments, if they had been accurately made, and stated in detail, would have a most important value. As they are such that might easily be made at almost any mill, fitted up with pans or Chile mills, we trust some of our enterprising mill owners will report them and communicate the result to us for the benefit of the public.—[Eds. Press.]

## Home Productions.

A superior quality of farina, maccaroni and vermicelli, in quantities almost sufficient to put a stop to foreign importation, has, for many years, been manufactured at the establishment of Messrs. Brignardello, Macchiavello & Co., in this city, having the reputation of being similar in every respect to the imported article—being, in fact, put up here after the most approved French and Italian style of preparation, and from the same kind of wheat. The species of wheat used for first quality of farina, has a very hard grain and is dark-colored throughout, the seed having been first imported about ten years ago. It grows well in Contra Costa county, Santa Clara, and perhaps in some other counties; showing, however, a decided tendency to degenerate, and requiring a renewal of the seed every two years. It is furnished at the mill by contract, at two cents per pound; the rate ruling somewhat higher than the average of the best California wheat, in consequence of the very limited demand. This class of farina, together with the different forms of maccaroni, vermicelli, and other preparations from it, is well known to be not only a wholesome and nutritious article of food to the healthy and vigorous; but, owing to its remarkable delicacy, and the "life-giving" properties it possesses, has become as a diet almost indispensable, both for the sick-room and nursery.

A second-class farina, not quite so palatable and digestible, perhaps, and worth about one-third less in the market than the former—made from our best white flour—is also prepared in considerable quantity here, as also in one or two other places in this city, and in some portions of the United States; but so far as we have been able to ascertain, the firm above mentioned have the only manufactory to be found anywhere within the limits of the United States for the first and best quality, produced from the imported seed. This may be cited as another instance in which our young State takes the lead of her older sisters, competing with the foreign market in raising the raw material, and that under some disadvantages, and in furnishing from the same the almost entire supply for home consumption—turning out, last year, about 20,000 boxes of maccaroni, using 10,000 sacks of the Russian wheat for the first quality, and 600 barrels of California flour for the second quality.

As curiosity led us to witness something of the *modus* of its preparation, a brief description of some of the stages through which it passes before it takes its place in the ware-house as an article of commerce, may not be without interest to others. The grain is ground, or rather crushed—but not so fine as flour in a grist-mill—the bran being partially separated by the ordinary screen used in the same. It then passes through from three to five different manipulations, through as many somewhat differently perforated sieves, worked by skillful hands—no machinery having as yet been invented capable of performing the delicate work required, so well as muscle and brain. After these processes it appears as pure farina. The next step is to throw it into a large vat, with sufficient water to give it the consistency of dough, adding the necessary quantity of cast steel saffron to furnish the proper color, as seen in the market. It is then kneaded for about an hour, by means of a large stone wheel, similar to that of a Chile mill. The dough is now prepared to go into a cylinder press, heated by steam, by which it is also forced through perforated plates inserted in the bottom of the same, having apertures of all the varied forms and sizes for making all the different kinds of maccaroni, vermicelli and paste, that ever graced the shelf of the grocer, or the table of the epicure. The mill, with all its machinery, is driven by a 25-horse power engine, built at the Miners' Foundry.



## Mechanical.

## Improvements in the Manufacture of Steel.

Improvements in the manufacture of iron and steel are still sought after with all the appliances which ingenuity and science can suggest. The discovery of the pneumatic or Bessemer process appears to have opened a wide field for research in this direction, although that process has by no means superseded that of "cementation." The most that it has done has been to furnish an inferior quality of steel, at so low a price as to allow of its much more general introduction into the useful arts than had previously been proved economical. Bessemer steel has not yet been obtained of so good a quality as to take the place of that produced by cementation, for numerous applications in the way of machinery, to say nothing of the manufacture of tools, etc. Indeed, there are but very few localities that produces an ore suitable for first-class steel, even by "cementation." Nearly all the good quality of steel manufactured in England is from Swedish iron, imported at a cost of from \$150 to \$175 per ton.

Even the Bessemer process for inferior steel, can be made successful only by the employment of iron made from certain classes of ores. Pig iron, which contains over one-tenth of one per cent. of sulphur, or seventy-five one-thousandth part of phosphorus, or one and three-quarters of one per cent. of silicon, is not suitable for Bessemer steel.

And since most of the American pig iron is made with coal containing more or less sulphur, and as our magnetic iron ores contain a considerable percentage of both sulphur and phosphorus, they are, to a great extent, unsuitable for the Bessemer process. In fact, the opinion of scientific and thoroughly informed men at the present time, inclines to the idea that any Bessemer steel which can be made in this country will be found unsuitable for many uses to which it is applied in Europe, and applicable to little else than railroad iron, or some similar purpose, where a very inferior article can be made to answer. A good quality of Bessemer steel cannot be made here, until we can obtain a quality of pig iron more suitable for such manufacture than any yet produced in this country.

## THE HYDROGEN PROCESS.

While, however, we are laboring under this disability, it appears that a more recent invention than Bessemer's bids fair to take precedence of both that and the "cementation" process. It is said to be cheaper than the former, and about, if not fully, equal in excellence to the latter. It is known as the "hydrogen process." The best ore for this process is said to be found in inexhaustible quantities in New Jersey, and is nothing else than the well known "Franklinite," of that State.

This ore contains, according to Dana, about sixty per cent. of oxide of iron, fifteen of manganese, and seventeen of zinc, with an earthy residue—a most remarkable mineral compound, found nowhere else, we believe, on the earth. When mixed with ten or fifteen per cent. of magnetic iron ore, and combined with hydrogen in the blast furnace, Franklinite furnishes a natural flux and purifier of iron. The zinc unites with the sulphur and phosphorus in the ore, and passes off with them in a volatile form; while the great heat produced by the use of hydrogen reduces a large portion of the manganese to a metal, and turns out a quality of refined iron, said to be the very best for the manufacture of superior steel.

The refining of this iron can be carried still further, and the uncertain carbonate, produced by the above process, converted into a pure hydrate of iron, which may be run into a converting furnace, and there readily re-carbonized to the precise extent desired; when it may be cast into ingots of steel, of a quality quite equal to that pro-

duced by the ordinary cementation process, and at a greatly reduced cost, as will be readily apparent to any one acquainted with steel manufacture, who will take the trouble to consider for a moment the manipulation of the two processes.

The "hydrogen process" is already in successful operation in Europe; and it is stated by experienced iron masters, who have tried it with various suitable furnaces, and with different kinds of coal, that the saving of fuel in this process is fully one-third.

The process has not yet received a fair trial in the United States. The first experiments were made on other ores than Franklinite, with lime only as a flux. It is now said that by using the Franklinite, as above described, with a very little lime, all difficulties in the way of this mode of obtaining steel will be removed. It was recently stated in the *New York Journal of Commerce*, that this process will soon be put into operation, with the New Jersey ores, on a large scale. The experiments already made, taken in connection with the well established results in Europe, seem to leave no doubt of the fullest success for the new enterprise, which will also develop our valuable deposits of Franklinite, for the reason that no feasible system of working them has hitherto been devised. Attempts have been made to work this ore for zinc, but without success. The problem of their true mode of utilization will, doubtless, soon be practically demonstrated.

## STILL ANOTHER PROCESS HINTED AT.

It will be interesting, in this connection, to briefly allude to another line of investigation into the problem of steel manufacture, which is founded on the recently discovered absorbent capacity of iron, and which we find alluded to as follows in a late Eastern exchange:

Recent investigations by Mr. Graham, the master of the British Mint, have led to the conclusion that pure iron is capable of absorbing at a red heat, and of retaining, when cold, 4.15 times its volume of carbonic oxide gas; and that wrought iron, in the course of its preparation, may thus occlude six or eight times its volume of the gas, which is carried about with it ever after. Mr. Graham found in his experiments that a wrought iron wire gives off this gas freely at a red heat, and again, at the same temperature in an atmosphere of carbonic oxide, as freely absorbs it. The further pursuit of this suggestive discovery will very likely have an important bearing on the improvement of iron and the manufacture of steel. The decomposition of carbonic oxide at a high temperature for the production of steel, with the fact developed by Mr. Graham, that the gas is most freely absorbed by iron at a low red heat, suggested to him the possibility that the conversion might be promoted by frequent alternations of temperature.

THE first iron planing machine is believed to have been made in 1794, at Messrs. Horrocks, Miller & Co's works, Preston, England. It was designed for planing mule tracks, was five feet long, had a cross-beam and sliding-tool, and the carriage was worked by hand through a drum and chain. Mr. Richard Robert's first planing machine, made in 1817, was five feet long; the carriage being moved by hand through a drum and chain.

TO REMOVE THE TASTE FROM NEW WOOD. A new keg, churn, bucket, or other wooden vessel will generally communicate a disagreeable odor to anything that is put into it. To prevent this inconvenience, first scald the vessel with boiling water letting the water remain in it till cold. Then dissolve some pearlsh or soda in lukewarm water, adding a bit of lime to it, and wash the inside of the vessel well with the solution. Afterwards scald the vessel well with plain hot water, and rinse it with cold water before you use it.

IMPROVED STEEL MASTS.—This is the latest application of the Bessemer product; substituting much lighter and slenderer tubes of steel, for the wrought iron article which had already been applied to some extent in the British navy in place of "sticks." The new mast is strengthened by transverse longitudinal plates.

## Scientific Miscellany.

## Recent Chemical Discoveries.

The London *Quarterly Journal of Science*, for January, reports a number of new and interesting facts in chemical research, which have been announced since its previous quarterly issue. Among them we note the following:

A NEW METAL.—M. Meisner and Rosler, of Germany, announce the discovery of a new metal, allied to the alkaline series, and which gives a sharp, dark-blue line in the spectroscopic, in a different position from that given by iridium. The discovery was made during the process of a mineral analysis. They promise a further account of the metal at an early day.

ZINC.—In connection with zinc, some notes by Renault are referred to on the phosphoreted compounds of that metal. Renault finds that zinc and phosphorus unite in many and variable proportions—six of which phosphides he describes, and one of which in particular is worthy of note. This is the compound  $Zn^3P$ , which will keep, without change, in the open air, and serve well for the preparation of spontaneously inflammable phosphoreted hydrogen. This compound is prepared by mixing one equivalent of phosphate of magnesia with two of artificial sulphide of zinc and seven of carbon. The mixture is heated in an earthen crucible, and the phosphide of zinc sublimes. Hydrochloric acid, added to fragments of the phosphide, causes the evolution of gas which inflames at  $30^\circ$ ; but with the powder, the spontaneously inflammable gas is obtained.

A NEW ETHER.—On the border-land, between mineral and purely organic chemistry, we notice the formation, by R. Maly, of an ether of tungstic acid, by treating oxychloride of tungsten with strong alcohol. This tungstic ether forms a hard, brittle, glassy mass, insoluble in water, alcohol or ether. When heated on platinum foil, it burns with a smoky flame, and in the end yellow tungstic acid is left as a residue.

TANNIN FROM COAL.—Mr. Skay communicates to the *Chemical News*, the fact that a substance resembling artificial tannin is produced by the action of nitric acid on bituminous coal and lignite. The substance is soluble in water, has a bitter taste, and is precipitated from its solution by gelatin and albumen.

SPONTANEOUS CHANGE IN CHLOROFORM. It has recently been ascertained that chloroform is subject to a spontaneous alteration, which results in the disengagement of phosgene gas. The presence of this gas may generally be detected by the smell, but Stadler has ascertained that bilirubin, the red coloring matter of bile, when brought in contact with altered chloroform, turns orange-red and soon afterward green. Bilirubin may be obtained sufficiently pure for a test in the following manner: Place a small quantity of fresh bile in a test tube; dilute with water and acidulate with a few drops of hydrochloric acid; then add a little bisulphide of carbon; shake well; allow the bisulphide to co-operate; and wash the residue with alcohol and ether. The undissolved red powder which remains is bilirubin.

TO ESTIMATE THE RESIN IN SOAP.—A method, of some practical interest, is given by Mr. Sutherland, for estimating the amount of resin in soap: The soap is first decomposed by boiling with strong hydrochloric acid; then treat the mass of mixed, fatty and resinous acids with strong nitric acid, by which the resinous matter is converted into soluble tenbic acid, while the fatty acid is left comparatively unacted on. The process, though not rigidly exact, is very useful for ordinary practical purposes.

MICA, in its chemical nature, is a silicate—a glass—there is no solvent for it known; at least none from which it can be recovered.

THE SPONTANEOUS IGNITION OF COLORED FIRES.—From some experiments made by Chas. Bullock, Esq., of Philadelphia, it appears that the use of flower of sulphur in these mixtures is a fruitful cause of such action. By preparing a material without this ingredient, which may be very successfully accomplished in most cases, it will keep well for years.

Two correspondents of the London *Chemical News*, Mr. Spiller and Mr. Clark, have also called attention to the important fact of the liability to spontaneous combustion of the compositions for making red and purple fires. The composition for the latter, made with the black oxide of copper, as it usually is, is almost certain to inflame, spontaneously, sooner or later. He suggests that carbonate of copper should be used instead of the oxide.

PAPER which turns pale ink at once black, called by its inventor carbonized paper, has been devised by Mr. J. E. Hoyer, of Philadelphia. The action claimed is effected without any detriment to the character or durability of the paper; since the means employed is the introduction into the glazing of a neutral carbonate, which, while effecting a prompt oxidation of the ink, has none but a beneficial action on the fiber of the paper.

PNEUMATIC TUBES.—The French are introducing pneumatic tubes into Paris. They are operated, however, on a principle the reverse of those in London. While the English exhaust the air in advance of the pneumatic car, the Parisians compress it behind. It is found that the pressure required is only one atmosphere and a half. The French mode will probably be found both the simplest and cheapest.

WATER MARKS on paper are made by the deposition of the pulps during the manufacture, in a thin layer or a sieve of fine wire. Any device which may be woven into the net-work will be above the general surface of the sheet, which will be thinner there, and transmit the light more readily than other portions of the sheet. Hence the appearance of "water marks."

If the current of sparks of an induction coil be passed through the luminous flame of gas or a candle, no alteration is seen in the flame, excepting that in the path of the sparks the flame is intensely luminous. If, however, the flame be examined by means of the rotating mirror, it is found that the flame is always extinguished above during the passage of an individual spark. The part below the spark is constant and steady.

ELECTRIC "FLUID" OR ELECTRIC FORCE? The later discussions tend toward the theory that a conductor of electricity is a medium for the transmission of a force or effect, rather than a channel for the locomotion of an agent. In this direction there is a chance for discovering the physical properties which render conducting substances susceptible to electric force, and those which disqualify others.

VARIABILITY OF ATMOSPHERIC ELECTRICITY.—The quantity of atmospheric electricity at noon, is much greater in winter than in summer, the relation being about ten to one. This augmentation of electric force proceeds in a manner almost parallel, with the number of days of frost or fog, and inversely as the number of days of thunder, elevation of temperature, and actinic power.

PLANT DEVELOPMENT.—M. Quetelet says that careful observations have convinced him that a plant develops much more rapidly during a mean temperature, when this temperature varies, than when it is uniform, provided that it does not fall below freezing point. He is also of the opinion that the effect produced is equal to the square of the temperature.

SUBMARINE PHOTOGRAPHY.—M. Bazin has obtained clear submarine photographs at a depth of 300 feet, in his diving studio, by means of the electric light thrown through water-tight lens windows upon the objects to be photographed. The value of this invention in submarine surveying is obvious.

CHLOROFORM is an excellent article for the removal of stains of paint from clothes, etc. Portions of dry white paint which successfully resist the action of ether, benzole, and bisulphide of carbon, are at once dissolved by chloroform.



## A New Steam Stamping Quartz Mill.

Various methods have from time to time been devised, both in California and the Eastern States, for the direct application of steam to quartz mill stamps, after the manner of the application of steam to the hammer. Our knowledge of these efforts, however, has been derived only through the records of the Patent Office, and the various scientific and mechanical publications of the East, until our attention was called, a few days since, to the recent invention of James & Condicts, one of whose mills—a small prospecting machine—has recently been sent to this city, to the charge of J. Ross Browne, our Commissioner of Mining Statistics, who has placed it on exhibition at the Pacific Foundry.

This machine is quite different in its construction from any other to which our attention has been called. It consists of a battery of two stamps, the peculiar character of which is that the downward movement of the stamps is effected by the aid of high-pressure steam, while the upward movement is produced by steam at a low pressure. Of course the stamp-heads are affixed directly to the pistons. The induction and eduction of the steam to the upper portion of the cylinder, which produces the "strike" of the stamp, is made through a direct communication with the hoiler, and may be kept at any desirable rate of high pressure. The stamps are lifted by low-pressure steam, introduced into the cylinders, and kept in constant communication, without the intervention of working valves, from a steam-chamber having such a minute connection with the hoiler as to keep up only the degree of pressure necessary to raise the stamps and prevent an excess of condensation. Of course, when the piston is driven down, the lifting force from the low-pressure steam-chamber, which maintains a constant resistance in the cylinder, must be overcome; but as that is only ten pounds to the inch, it is found more economical to increase the steam in the hoiler, say from 70 to 80 pounds, to overcome that ten pounds of constant resistance, than to waste a whole cylinderful of high-pressure steam at every stroke merely to raise the stamp. The induction and eduction to and from the upper end of the cylinder, is alternately effected by a tappet motion produced by the movements of the stamp-stems themselves. The action of the steam which effects the blow being controlled by the upward movement of the piston, and the steam which produces the lift being constant in its pressure; the greater or less descent of the stamp, incident to the greater or less amount of rock beneath it, may always be readily accommodated.

We learn from Prof. Whitney that this principle of actuating the movement of a steam piston has already been successfully applied to working rock. Some twenty years ago, a Mr. Ball invented a crusher on a somewhat similar plan, which has been for many years in successful operation in the Lake Superior copper districts. The mechanical contrivances by which the principle is applied by Messrs. James & Condicts is probably an improvement on the Lake Superior machine. We see no reason why the principle employed might not be made especially serviceable for many other mechanical purposes, where the power required is unequal and reciprocating, as in the raising of full huckets and lowering of empty ones, in mines and other places, the driving of steam hammers, etc.

It is impossible to judge of the practical value of such a machine by witnessing a mere trial of its capacity. It is certainly simple and effective in its action, and by the rapidity and force with which the stamps may be driven, it is possible to turn out a large amount of work with a very small machine. How it will stand the long-continued and rough usage inseparable from quartz-crushing, we cannot say. It is light, occu-

pies but little room, and is constructed so as to admit of a most economical use of power. We should suppose such a machine would be found especially serviceable for a prospecting mill. It is only about two feet square and six feet high, including stamps, mortar and cylinder, but without a hoiler. It does not weigh over 1,500 pounds. The machine is well worth the attention of our mill men.

It is the invention of Christopher R. James, of Jersey City, N. Y. The patent was issued to James and Nathan W. Condict, Jr. It may be seen at the Pacific Foundry, in this city. J. Ross Browne is agent for inventors for this coast.

## Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

140.—MR. E. M. ROBERTS, of this city, has laid upon our table some samples of spathic iron ore, from Lower California. We are not advised as to whether it occurs in workable quantities. This is a very valuable ore, and is abundant in the coal and iron regions of Pennsylvania, and many parts of the West. It is extensively employed in Pennsylvania in the manufacture of iron and steel. The ore is known as *Chalybite*; is a carbonate of iron, consisting of about 35 per cent. of  $\text{CO}_2$ , 54 per cent. of FeO, with small quantities of manganese, magnesia and lime.

141.—MR. GEO. H. BELDEN, Superintendent of the Portland (Oregon) Iron Works, has sent us some specimens from the ore-beds from which that company will derive the ore for their furnaces. The ore is a brown hematite of a very superior quality, such as would probably yield from 50 to 60 per cent. of iron. Analysis of this ore show about 77 per cent. of sesquioxide of iron, 11 per cent. of moisture, and 12 per cent. of silica, with a mere trace of sulphur. We hope soon to be able to give some working results from this furnace—the first and only enterprise of the kind on the Pacific Coast.

CINNABAR IN MONTANA.—A correspondent writing from Virginia City, Montana, says that the report, which became current some time since of the existence of cinnabar in the ground of the Brooklyn Golden Ore Mining Company, is not correct. The author of the report mistook hydrated red oxide of iron for cinnabar, and the graphite in the granite of Brown's Gulch for the bromide of mercury. Our correspondent adds: "I am satisfied that cinnabar exists in our mountains, having myself seen a small specimen, found in a creek between the Jefferson river and Helena."

CALIFORNIA FARMING COMPANY.—A company under this name has been formed in this city, with a capital of \$1,000,000, divided into 10,000 shares of \$100 each. The object of the company is the furnishing the laboring farmer with capital to cultivate his land to better advantage than his private cash means will allow. Also the purchasing of agricultural land, one half of which will be cultivated for account of the company, and the other half divided among the shareholders, to be worked for their own account.

ARIZONA SALT.—Capt. Rogers—who is known as having been the first to take a steamer up the Colorado river to Callville, the head of navigation—has shown us a beautiful crystal of rock salt from that Territory. It is a cube of one inch diameter, and so perfectly clear that fine print can be read through it with perfect ease.

"A YOUNG MAN'S MISSION."—We have received a copy of a sermon with the above title, preached by Rev. Dr. Wadsworth, in Calvary church, on the evening of Sunday, February 17th.

## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issue.

### PATENTS RECENTLY ISSUED.

62,127.—RAILWAY CAR.—Ab'm Gregg, Forest City, Cal.;

I claim, 1st, The method of attachment of the extreme ends of the trucks to the car by king-bolts, g', so that the brakes can be worked in the center of each shaft; also the combination and arrangement of the hox-coupling, D, to the center of the axle, so as to insure the two-fold purpose of a brake-wheel and coupling.

2d, The combination and arrangement of the double-acting brake, E, E, with springs, F, and levers, I, H and K, so that it will clasp both sides of the wheel at the same time with equal pressure.

3d, The two bearings, a, a, to each section of the axle to prevent hindering in the coupling-box; likewise planing the springs, f, f, between the trucks and platform and carriage, so that the shaft will have bearings near its center.

4th, The cross-tongue, h, attached to street cars when operating in parallel slots, i, i, so that when a car passes a curve the outer end of the cross will move back in the slot, bringing the draught on the outer end of said cross or tongue, substantially as described and for the purpose set forth.

62,160.—ROCK-CHAMBER DRILL.—Henry M. Stow, San Francisco, Cal.:

I claim the chisels, B, connected with the handle, C, in the manner described and for the purpose specified.

62,169.—COOKING RANGE.—Thomas C. Walter, San Francisco, Cal.:

I claim, 1st, The furnace, A, and the ovens, D and E, with the flues, K, F, f, and h, with their regulating dampers, constructed as described for the purpose set forth.

2d, The compartment, C, in combination with the furnace, A, arranged as described.

3d, The register, N, with the damper, m, and the damper, B, combined with the furnace, A, as described.

4th, The arrangement of the furnace, A, with the damper, B, and the register, N, the ovens, D and E, with their flues, and the compartment, C, all operating together substantially as and for the purpose set forth.

62,172.—SAD-IRON HEATING APPARATUS. Joseph Davis Westgate San Francisco, Cal.:

I claim an ironing apparatus, consisting of the sad-iron, B, and stove, A, constructed as herein described, lined with a non-conducting material, substantially as and for the purpose set forth.

62,053.—FIRE PLACE.—Warren P. Miller, San Francisco, California:

1st, I claim a lining or partition, g, made of suitable reflecting metal, and located within an air-heating chamber behind the fireplace or chamber, and separating the latter from the dead air chamber, substantially as and for the purpose specified.

2d, In combination with the partition, g, I claim the air-heating chamber, e c c, and dead air, or non-conducting chamber, d, all constructed and arranged in the manner and for the purpose specified.

### RECENT INVENTIONS.

A HOISTING INDICATOR.—Mr. F. Thayer, head engineer of the Savage Mining company's hoisting works, Virginia City, has invented, and has now in use at the Curtis shaft, a hoisting indicator which works to perfection in the way it was intended. The *Virginia Tresspass* describes it as built like the dial of a clock, with a single hand turning on a center axle, and by figures on the margin (to be changed with a new level is opened), to which the hand points as the cage descends or ascends the shaft, the engineer, without seeing either cage, shaft or rope, is enabled to know the precise level desired to be reached, or when the surface is attained. The old method has been to attach cloths around the rope, and thereby ascertain when the requisite level is reached. Mr. Thayer's invention entirely obviates this plan, and is perfectly accurate in its practical workings, never deviating an inch from the required point to be reached. This invention is of great benefit for two reasons: first, the cost of cloth for indicators, which becomes rapidly worn through constant friction, was at the Curtis shaft at least \$15 per month, and a light sufficiently brilliant to enable the engineer to see the marks on the rope cost a very considerable sum more. With Thayer's indicator, as stated before, neither cloth nor light is necessary to work the cage, except the light in the engine-room. A patent has been applied for.

## NEVADA MINERALOGIST'S REPORT.—Hon.

J. S. Mayhugh, member of the Nevada Legislature from Esmeralda, has sent us a copy of the annual report, for 1866, of Richard H. Stretch, Stato Mineralogist of Nevada. It contains a catalogue of all the principal minerals in that State, with their localities; a table of the quartz mills in the State; analyses of ores and waters, and an enumeration of nearly 150 mining districts of the State, with notes in regard to each. In addition to this, it has an article on "The Causes of the Decay of Mining Enterprises in many portions of the State," and another entitled "Hints for the Use of Prospectors, and persons engaged in the Early Development of Mining Property." It seems to be very complete, and will be an interesting and valuable book of reference.

ASSAYERS' MATERIALS of every description, as well as chemists' and druggists' glass ware, photographic stock, etc., may be found in great variety at the establishment of John Taylor & Co., on Washington street. They pay particular attention to the assaying and chemical branches of their business, and are always on the alert to select the fullest and best assortments attainable of all such articles as are needed to aid in the researches after, and development of, the mineral wealth of the Pacific coast. Call and see them.

RARE COLLECTION OF AMERICAN COINS.—Messrs. Repiton & Bumpus, of No. 626 Montgomery street, have perhaps the only complete set of American coins in the hands of private individuals in the United States. They have the American silver dollar for every year, from 1794 to 1866, half dollars from 1794 to 1867, quarter dollars from 1796 to 1867; dimes from 1796 to 1861; half dimes from 1794 to 1867; cents from 1723 to 1867; three-cent pieces from 1851 to 1867; two-cent pieces from 1863 to 1867, and half cents from 1793 to 1857. This collection has occupied more than fifteen years of Mr. Repiton's time, and cost about 20,000 dollars. As an instance of the rarity of some of the coins, we will state that the silver dollar of 1804 cost \$950, and Mr. R. had, before he succeeded in finding one he could purchase, made an unsuccessful tender of fifteen hundred dollars for one in the possession of a gentleman residing in Salem, Massachusetts. Of the silver dollar of 1838 only eighteen were minted, and consequently they are very rare. The silver dollar of 1852 is also very rare, and is rated by numismatologists at from \$300 to \$500. Besides this collection of American coins, Messrs. R. & B. have specimens of the coins of nearly all nations, and some coins over two thousand years old. The coins are a great curiosity, and their owners could readily sell them for fifty thousand dollars. *Morning Call.*

## City Amusements.

METROPOLITAN.—Heller has introduced several new and surprising tricks this week. Among these "The Mocha" and "A Photograph in the Negative," are very neatly performed. The "Spirit Sack" is the sensation this week, and shows that Heller's control of the spirits is about as great as that of the Davenport brothers. The musical portion of the entertainment is fully equal to his previous efforts, and charms all who are fortunate enough to hear it. As this is the last week but two, those who have not heard him should take the earliest opportunity.

OPERA HOUSE.—"The Fast Family" was produced at this house on Monday night, when Miss Kate Denin made her reappearance. Her acting as "Clothilde," who endeavors to reform the Benoit family, was extremely good. Mr. McCullough as "M. Didier," and Mrs. Edwin as "Blanche," were also very good. The same piece was played on Tuesday and Wednesday nights. Thursday evening was the occasion of a benefit to Henry Edwards, when "Julius Caesar" was played.

PLATT'S HALL.—The benefit of Mrs. Olmstead on Tuesday evening was a decided success, being attended by a good and well satisfied audience. Wednesday evening Madame Jaffa, the pianiste, gave her first grand concert. On Thursday, April 4th, Rosa Celeste, the rope walker, will receive a grand benefit, when she will make her first appearance since her accident. An immense bill will be presented, which should crowd the house.







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of March 9th: The Illinois California company cut the first ledge of the series owned by them on Monday. It is named the Franklin.

The George Washington company, owing to the storm, suspended operations some two weeks ago, but commenced again on Monday. The Mountain stopped for a few days, but has again resumed work with increased vigor, having struck softer rock. The Illinois California, in Raymond Dist., suspended work for a few days, but has got in motion again. The Pennsylvania has kept in motion during the storm, and is making good progress.

Same of 16th: In the George Washington there are many chimneys of good width to be seen, which, if followed down, would now give employment to a 10-stamp mill to its full capacity. The shaft now being sunk from the second level is producing good ores, and the tunnel at the extremity of the level reveals a chimney, the selected ores from which will average at least \$100 per ton.

From the Alpine *Miner* of March 16th: Work in the Mowyer goes bravely on, and the prospect is encouraging.

The workmen in the Tarshish tunnel struck quartz on Thursday.

## Amador County.

From the *Ledger* of March 23d: The new Atchison mill was put in operation last Monday. It has 20 stamps, and a Corliss' engine. The structure of the mill is of the most substantial character, and the arrangement is perfect.

At the Sutter Creek every thing is lively. It is one of the most thriving of mining towns.

## Calaveras County.

From the Copperopolis *Courier* of March 23d: The Angels Quartz Mining company have resumed work.

Stickles & Co's principal shaft is now 120 ft. in depth. The vein at the bottom of the shaft is 20 ft. wide, and pays the whole width.

Bovee & Co's new mill is running, and the mine pays well.

Prospects at Carson Hill are more flattering than ever. The quartz mills are in process of building.

## El Dorado County.

From the Plaverville *Courier* of March 23d:—Messrs. Gillenwaters & Christian are opening a cut to their rich ledge on the Poverty Point road. They have followed the vein some two hundred feet. This ledge is narrow but very rich. About thirty feet from this is another ledge, about three feet in width, owned by the same company. This ledge prospects about fifty dollars to the ton.

On Clay Hill, Grove & Crocker have their tunnel in thirty feet on a ledge of an average width of three feet. The rock prospects well. Burns & McBride have commenced a shaft about 400 ft. east of this. The shaft is down 20 ft. on a ledge 12 inches wide. Nearly 300 ft. north of this is another claim, owned and worked by Grove & Crocker. From various tests the poorest rock assayed a hundred dollars to the ton, while the richest assays as high as eleven hundred dollars. There is very little free gold. Some three hundred feet further north is the claim of Williamson, Chick & Co. Their shaft is down about 40 ft., at which depth the ledge is three feet in width, and widening. This rock will pay at least \$60 to the ton.

Work on the Woodside was resumed on Monday last. It will take three or four weeks to clear the mine of water. A battery of five stamps is to be driven by water power. They have rock enough on hand to keep them crushing for some time. The "Clipper Company" will commence operations next month. The "Eureka" have cleaned out their shaft, erected steam works for pumping and hoisting, and gone to work in good earnest. Mr. Pitch is prospecting a ledge about three miles below Georgetown, known as the "Bohannan" ledge. Here he is running a tunnel, which is in 122 ft. It is expected they will strike the ledge in about four months. The "Taylor" ledge, in the Johntown district, a short distance from the "Bohannan," is being prospected by Mr. Green. A few months will stamp this Divide as one of the richest regions in the State—capital alone is wanted to develop the mines. Yesterday, Mr. Moek, mining in a ravine near Dry Creek, about 2½ miles from town, took out a nugget of gold weighing \$195.

Georgetown correspondent of same says: The Low Claim, two miles north of town, has a shaft down 100 feet.... The Philadel-

phia Slide claim is on Cañon Creek, about one mile above Georgia Slide, and is the first southern extension of the Low claim. The shaft is down 14 ft. on an incline, and the ledge is seven feet wide, and full of the finest quartz and sulphurets.... Six pounds of picked rock from the Taylor mine prospected \$11. The ledge is three feet thick, and the whole averages \$25 to the ton.

## Nevada County.

From the *Transcript* of March 24th: Sixty-five tons of rock from the Wagoner ledge, recently worked at Palmer's mill, yielded \$2,275, being at the rate of \$35 per ton. This ledge is located on Piety Hill, and is owned by Sigourney, Hill & Co. The main tunnel is in 200 ft., and the rock crushed was taken out in prospecting. They are now about 75 ft. below the surface.

The incline on the Cunningham ledge is now in 170 ft. below the surface. At the old level, 100 ft. below the surface, a tunnel has been run, and a day or two since a splendid ledge 18 inches wide was struck.

Same of 27th: The Monadnock mine has been leased by its owners to McCarty and McDonald for two years. The parties will commence work immediately. The lead is supposed to be an extension of the Italian ledge.

From the *Gazette* of 21st: Our Omega correspondent gives these items: Harrington has resumed operations at Tecumseh. The Fidelity company are moving their house from the Tecumseh to the flat near the mill, and will commence work immediately on the Fidelity mine. The Marietta company (not Mary Etta) commonly known as the "Marvine mine," have been crushing rock in their new mill. They have just struck quartz in one of their tunnels that pays \$100 per ton. The mill is a new one, with hurdy gurdy wheel, and works splendidly.

Same of 25th: At the present time considerable quartz prospecting is going on in the foot hills, in the eastern part of Yuba and in Placer county. At Colfax a ledge has been opened called the Rising Sun, which gives promise of being a valuable mine, and the owners are now erecting a mill.

Same of 28th: The new mill of the Eagle company, on the California mine, is nearly completed, and will be started up for regular work some time this week.

From the Grass Valley *Union* of March 22d: The development of the O'Connor mine is progressing rapidly. Within the past 20 days, with a working force of two "shifts," 70 ft. have been run in the north-west drift, where the vein is steadily increasing in width. In the same period they have run 120 ft. in the southeast drift. In this drift the ledge now shows a width of 5 ft. between the walls, and the rock is of excellent quality.

A correspondent of the Dutch Flat *Enquirer* writes thus of Red Dog, March 23d: The blue gravel lead runs through Red Dog, and so on to Hunt's Hill (better known as "Gouge Eye") and Quaker Hill. Ed. Williams & Co. have a fine 12-stamp steam mill for crushing cement, and are taking out large quantities of gold. They are working 30 men, and are sure of having ground that will pay well for two years. Ennis & Co. have a 10-stamp water-power mill. This claim has been very successfully worked for about a year.

Wear & Garber are working the old Malory & Brothers' claim. This is the first blue gravel claim ever worked in Little York township, and has been "worked out" two or three times, but strange to say, is paying better than ever before.

The American company's claim, at Manzanita Hill, North San Juan, are now held at \$140,000. The gross income of the claims has amounted to \$105,000 per year for the last three years; but the expenses for water and working consume nearly half that amount, and leave for dividends on an average for the three years \$52,800 per year, or \$4,400 per month.

## Placer County.

From the *Herald* of March 23d: The crushing last week at the Harpending mine yielded 500 ounces of amalgam. Prof. Siliman is now on a visit to this mine.... The Ambruster claim, located on Georgia Hill, near Yankee Jim, was sold on Wednesday last to Dr. E. B. Harris for \$10,000.

Colfax letter to same:—Burnt Flat is bound to be a good mining camp. There are plenty of surface diggings that will pay from \$4 to \$8 per day to the hand when water is procured.... The Mountain View Quartz Lead is considered to be worth \$10,000 per share—four shares in the claim; Walker & Co., and Dillan & Co., are bringing in a ditch for the purpose of working other claims.... The mines about Kilmer's are proving to be rich. Some days as high as \$20 have been made to the hand.

McBride & Co., who found the 16-pound chunk at Bird's Valley, mentioned in our

last, found also another of 23 pounds. The *Stars and Stripes* says the yield of the first was over \$1,000, when panned up; the value of the other is not yet known.

A letter from Newcastle to the Grass Valley *Union* says: Capt. Mallet & Co., at the head of Badger Ravine, have erected a five-stamp mill, made one run, and had a good clean up. It paid so well that they have ordered five more stamps to be added to their mill, and they talk of putting up ten more soon. There is a large amount of unprospected cement gravel in this vicinity that will before long be worked by mill process.... Col. Hagen is making the first run with his ten-stamp Empire mill, crushing float rock.... The Kearsage Co., on the South side of Auburn Ravine, near Newcastle, are running a tunnel into their ledge, and are nearly in. The Buckeye Co., on the South side of Bald Hill, are sinking a shaft on their ledge, and have good prospects. They are down about 75 feet.

From the Dutch Flat *Enquirer* of March 20th:—The Messrs. King, having worked down upon their claim about fifty feet with the hydraulic process, struck a hard blue gravel, in which may be seen, in liberal quantities, free gold. The cement is exceedingly hard and requires crushing in order to obtain the gold. The owners have made arrangements to put up an eight-stamp mill.... The Iowa claim, just discovered, promises to pay at least \$15 per day to the hand.

Same of 23d:—The Lebanon company, at Prospect Hill, cleaned up thirty ounces after five days crushing. The Oriental mill, at Wisconsin Hill, started up on last Saturday to test the new machinery. It is said that the Rough and Ready company's mill at Grizzly Flat, has been purchased by parties from Dutch Flat, and is to be shipped immediately.

Letter to same from Colfax, March 19th, says:—A small vein of quartz, partially re-composed, was struck the other day in the street, by three who were digging a drain ditch. A pan was tried, and yielded two bits or more. "The news spread like wild fire, and the whole country was staked off in a few minutes."

## Plumas County.

From the *National* of March 9th: We learn that valuable diggings have lately been discovered near the head of Soda Creek, by Mr. Wilson Wall. It is reported that Mr. Wall obtained as high as \$50 per day with a rocker.

Judkins & Kellogg have broken a trail through the deep snow from the Cherokee ledge to the Round Valley mill, and are now hauling rock in sleighs for crushing. Bidwell & Co. are also hauling rock from the Caledonia ledge to their mill in Dixie Cañon. This rock is said to be quite rich. Rogers, Ferguson & Co. are engaged in running a tunnel to prospect the new diggings in North Cañon, between Round Valley and Greenville. The prospects are quite flattering.

The Quincy *Union* says that at the clean-up of Judkins & Kellogg's mill, they took out 200 ozs. for five days run. The Crescent & Whitney companies shipped to San Francisco \$6,100, the result of a week's run in their mills. The Crescent is running 22 and the Whitney 24 stamps.

## San Bernardino County.

From the *Guardian* of March 9th: Mr. Geo. E. Moore, the present proprietor of the Green lode, Holcomb Valley Dist., 38 miles east of this city, has caused the mine to be thoroughly prospected. He finds the vein to be from 2½ to 3 ft. wide, at the depth of 210 ft., and the rock to work from \$80 to \$100 per ton.... About six or eight miles distant from the Green lode, is the Olio, prospecting very well—about 80 feet down, and near it is the Mammoth, at about the same depth. Both lodes will prove profitable to the owners.... At the Cushman City mines, 10 miles east of Holcomb Valley, Messrs. John Searles, Dunn and Glassard are now taking out rock that prospects so rich, that it is their intention to ship it to San Francisco.

Near Marango Pass, some valuable copper mines have been discovered. Capt. Frink and party, from Los Angeles, are now prospecting them.

## Shasta County.

From the *Courier* of March 23d: C. F. Ellsworth has sold his real estate and mill property at South Fork, to the purchasers of the Chicago mine, for \$4,000.

The proprietors of the Eclectic claim, at South Fork, are sinking a shaft on the lode, and are finding just such rock as was found in the Chicago shaft at a similar depth.

We are informed that a conditional sale of the Crystal mine has been made to parties in San Francisco for \$35,000, the first installment of which has been paid.

We learn that Mr. Walsh is negotiating for the purchase of the battery of the Union

mill, at Lower Springs, with a view of removing it to South Fork.

Whittemore & Lanahan are engaged in opening a claim on one of the large flats on Clear Creek, below Horsetown, that will afford hydraulic diggings for a number of years.

The owners of the Highland mine, at French Gulch, have resumed work after a suspension of several months.

James Gerrard came down from Idaho last fall, and located a placer claim on Flat Creek. A few weeks ago he got fairly to work, since which time he has cleaned up from \$9 to 1 oz. every evening.

It is reported that Mr. Bryant, of San Francisco, has the refusal of the Ohio claim, in South Fork, at \$5 per foot.

## Sierra County.

From the Downville *Messenger* of March 23d: We learn that Rhodes & Co., who have a tunnel claim near Clement's saw mill, are taking out good pay.... Several new claims will be opened at Eureka in the spring.

## Siskiyou County.

From the Yreka *Union* of March 16th:—Messrs. McConaughy & Jenner are working an old claim at Etna, with encouraging prospects.

## Tuolumne County.

From the Sonora *Herald* of March 23d:—We understand that the proprietors of the "Tanzy" claim, situated east of this place, near the French Garden, have "struck it rich." The claim has just been opened, and the yield during the past week was averaged six ounces per day.

## Yuba County.

Letter from Bangor to the Marysville *Appeal* says:—The incline of the New North American Co. is down 70 feet. Young & Co. are getting along finely with their shaft. Bassett, Smith & Co. have a fine prospect. They are on the bed-rock, and have a drift run 125 ft. on the rock. They have now stopped for repairs, and to put in a heavier engine. This lead is on the Smartsville range, and can be plainly traced.

The *Appeal* of 26th says: The Rare Rippe Co., Brown's Valley, will erect an eight-stamp mill.

A number of quartz claims have been located near the Round Flat House.

## ARIZONA.

From the San Bernardino *Guardian* of Feb. 23d: We learn that the Moss lead is now in first-rate condition. There is on the road machinery for the working of the ore, which continues rich and abundant.

We hear that Mr. Hardy is about to put up a mill for working his mine, in the Sacramento Dist., on the Colorado river. The mill is to be at Hardyville. There are about 500 tons of rock on hand ready for crushing.

Mr. Thompson, of the Great Central company, sent down to the mouth of the river, for shipment to San Francisco, 20,000 lbs of copper, which had been smelted at the works of the company.... Martin & Co. of New York have erected extensive smelting works.

Prescott letter to same, says: The is something doing in placer mining, on the Haysayampa and Lynx Creek, and many persons have gone to a section of country about sixty miles in a southeasterly course from here, where, it is reported, good placer mines have been found. Some work has been done on the lode mines. John Laughlin is at work on the Orion bolt, which is looking well.

Letter from Hardyville to the Wilmington *Journal* of March 16th: The Moss Mine Quartz mill will commence crushing the Michigan mine ore next week. About 100 tons of rock are now at the mill. Mr. Hardy is prosecuting work on the Parson's lode, I think he will soon develop a rich mine.

## IDAHO.

From the Lewiston *Journal* of March 1st: The mining on the hars of Salmon River, has been to a great extent confined to rocker work, paying from \$3 to \$8 per day to the hand. But now ditches and flumes are being constructed to carry the water of the small tributaries of the river to the higher benches and bars, which offer sufficient ground for years of steady mining. About one-half mile below the White Bird trail are the Casaboule claims which employ six men averaging \$8 per day, per man. Four miles below this are the claims of Antoine Letalic, employing 15 men, and averaging from \$8 to \$15 per day to the hand. About one mile below this, are the Napoleon claims, worked with hydraulic power, which have yielded regularly for upwards of four years past a good profit upon the labor expended. Two miles further down the river, are the Pon's claims, employing 11 men who are averaging from \$10 to \$15 per day per man. There are still several other companies at work with creek water on different points of the river banks, between John Day Creek and



Long Bar. Among them is Chas. Snyder & Co., four men making \$8 per day per man. Besides the companies we have named, there are upwards of 100 men working with rockers along the river, between Long bar and French Creek, whose daily average for working time is from \$2 to \$8. From Long Bar to the mouth of the river, we are told that about 75 men are profitably employed. One company from Warren's went on the bars of South Salmon in August last, and remained till November, and averaged each over \$20 per day during their stay there.

At the Palouse mines, the Chinamen have bought the Kelly claims and paid the cash down, and are negotiating for the Colerick claim, which is held at \$5,000. The Franklin Co. are at work about a mile and a half from Gnat Creek and making an average of \$10 a day to the hand. The Peterson Co. is located on what is called Big Creek, and has good \$8 diggings.

From the Boise City Statesman of March 9th: From the Atlanta, Yuha Dist., Middle Boise, the DeFrees Co. are taking rock which is very rich, and a portion of it will equal in richness the best rock ever taken from the Poorman of Owyhee. The ledge is 22 ft. wide at a depth of 90 ft., and the average pay of the entire ledge is computed at \$75 per ton. Two hundred ft. in the 4th east extension, sold for \$10 per ft. in gold coin. The Luey Phillips ledge is owned by Messrs. Massheco, Graham & Co. They have struck a splendid ledge, containing some very rich silver ore. The Eclipse Discovery is owned by the same company, and a tunnel has been run this winter, striking the ledge at a depth of 150 ft. from the surface. The ledge is over nine ft. wide and rich. The 1st extension on the Eclipse ledge is owned by Messrs. Richard Thomas & Co. They have nine ft. solid ledge of rich paying ore. The Gray Eagle is owned by Williams, Stevens & Co. They are sinking a shaft on a 16-ft. ledge and getting very fine rock. They are down some 90 ft. The Hard Times is owned by Col. J. W. O'Neil, and has been prospected with tunnels. The Colonel is about starting from San Francisco with a 20-stamp mill.

From the *Avalanche* of March 16th: The deed of transfer to 133½ ft. in the Empire ledge is to be made to-day. Price per foot, \$15. Last week a sale was made of the same amount in the same ledge. It is situated on War Eagle Mountain to the east of the Poorman.

In the Dashaway the main shaft is down 70 ft. The vein is four ft. in thickness, and rich.

The Black Bros. have been for the last three weeks engaged in grading a place to build their furnaces, and would, but for the frost, soon be prepared to start the whistle. The mill is entirely completed and in running order, lacking only the completion of the roasting furnaces.

In Flint Dist., the Sherman discovery tunnel is about 75 ft. in. Another tunnel is being run on the second extension north. They are in about 90 ft. Messrs. Scott & Carter have commenced a tunnel on the first south extension, and expect to strike the ledge in 50 ft. Messrs. Warnke & Swart, who commenced a tunnel on the first extension south of the Leviathan about a year ago, struck the ledge recently. The ledge is fully four feet between the walls, filled with very rich quartz.

From the *World's Pioneer City* correspondence: Forty-five miles due north from here is Deadwood Basin. There are six men there this winter. Snow eight ft. deep. The diggings pay from \$8 to \$10 per day. Sifers & Wright struck the ledge in their lower tunnel on the Big Muddy, eight feet wide. Work at Elk Horn is progressing. They have found one of the ledges 3½ ft. wide, and worth \$30 to the ton.

#### MONTANA.

From the *Post* of March 9th: The Hawk-eye mill (Postlewaite's) made another seven days' run, and cleaned up on Sunday morning 362½ ozs., valued at \$6,525 in gold. This is the best run ever made in Madison county. The ore was taken from discovery claim on the Kearsage lode.

Prof. Deidsheimer, now in charge of the St. Louis and Montana smelting works, at Argenta, Prof. Steitz being still sick, finished the first run last Thursday, and turned over to the proprietors a block of silver weighing 90 lbs., as the yield of less than 4,000 lbs. of "rich lead," and the result of 1½ days' run. The silver extracted is .995 pure, and at the rate of \$16.30 per lb., foot up \$1,467. The ore was taken from the Legal Tender lode.

At Sterling, Prof. Ward has 60 men employed in developing leads. The Housel lead, in Norwegian Gulch, is said to be the richest lead yet discovered. It has a 3-ft. crevice. Clark's mill will be in running order by April 1st. Cope is still at work on the Pony and Galena leads, and is also tak-

ing out rock from the Blue for the next run. Atkin's mill on Meadow Creek is nearly completed.

In Flint Creek Dist., the "P. G." lode has a crevice 20 inches wide, with one shaft on it 16 ft. deep, and they are sinking another which they expect will strike the lead at a depth of 60 ft. From this lode we have seen specimens of rock containing pure native silver, not scattered over it in fine particles, but laid on thick, somewhat resembling an old-fashioned piece of bread and butter—more hutter than bread. An assay of ore from this lode shows \$2,902 per ton.

Letter to same from Elk Creek, says: In the lower portion of the gulch, three large companies have been to the expense of putting in bedrock flumes.

Bear Gulch is deep, and the claims therein are mostly drifting claims. Some do not require drainage. In some of these remunerative labor was going on all last summer and fall, and during this winter when practicable. Many bars and points have been worked and have paid well. One ounce per day to the man is not unusual. Miners are busy in the neighborhood of Bear Town.

Helena news: The new Eagle Creek Gulch they say prospects very well. Between fifteen and twenty shafts have been sunk in the gulch, up to the present time, as we learn from a gentleman just in from there, with flattering results. It is from 15 to 20 ft. to the bedrock, and the "pay dirt" is from 3 to 5 ft. deep, which prospects as high as \$2.50 to the pan.

#### NEVADA.

##### Esmeralda.

From the *Aurora Union* of March 16th: We have been informed that Mr. Wheeler, of Pine Grove, had 11 tons of ore from his claim worked in an arrastra, which paid \$50 per ton, and feels satisfied that not more than one-half of the gold was saved.

Letter to same from Pino Grove, Wilson Dist., says: There has been one clean-up at the mill, and 66 tons of Wilson's quartz yielded at the rate of \$40 per ton, or \$2,640. Important discoveries are being made between this place and Aurora. Croppings and indications are of the most favorable character.

The *Virginia Enterprise* of March 18th, also contains a letter from the same district, with these items: The 10-stamp mill owned by Capt. Pray, Gov. Blasdel and others, commenced crushing rock on March 5th for Mr. Wilson. Out of a run of 60 tons of rock, which had been culled and picked over for specimens, it cleaned up about \$3,000. The mill works admirably. The arrastras have been running but a short time, yet they have already shipped about \$1,000 worth of bullion. They have been crushing rock from the Wheeler and the Central. The gold here is very fine, it will assay \$18.50 per ounce.

##### Humboldt.

From the *Register* of March 16th: Mr. Torrey is progressing rapidly with his furnaces. He has a most convenient location, about a mile below Etna, and in three or four weeks will have his furnaces in full blast. He has 500 tons of ore out, and has a large force at work in his mines, and expects to keep his furnaces running day and night all summer.

Sixty pounds of ore lately taken from the Monroe mine, in Sierra Dist., and worked in a mortar, yielded \$362.80, or at the rate of a little over \$12,000 per ton in gold.

The Humboldt River company has purchased the Munroe mine near Dun Glen. A mill will be erected at once.

Mr. Sanchez, an old Mexican miner, has found a quartz ledge 200 ft. wide on the top, and in some places cropping out to the height of 100 ft. It is in the foot-hills east of Humboldt Lake. He has named it the Esperanza.

The New mines are located in Big Meadow Dist., 13 miles below Oreana, and two miles west of the line of the Pacific Railroad. All with whom we have conversed, who have visited these mines, speak well of them.

The Nevada Star company continues to press its work, with a full set of hands, day and night.

##### Reese River.

From the *Reveille* of March 16th: This morning, nine bars of bullion, valued at \$8,213.67, were brought into town from Silver Bend. They are the product of ore from Col. Buel's Highbridge, which was reduced at his mill at Belmont.

We have encouraging news from Reveille Dist. The Highbridge has 4 ft. of ore, with perfectly smooth casings. A mill is to be put up on the Scorpion. A large ledge has been recently discovered near the northern boundary of the district. It is 8 or 10 feet wide, and will, it is estimated, pay \$120 per ton. The Rutland mill is nearly ready to go into operation.

The Manhattan company is working at present the ore from its North Star mine,

which is of a high grade. The large lots worked during the month of February, and up to the middle of the present month, averaged \$240 per ton. Within the past few days a much better class of ore has been developed towards the end of the western level of the mine.

Same of 18th: Some of the practical results at Silver Bend are as follows: Colonel Buel put up his mill last September. Up to the middle of the present month there had been extracted from the Highbridge 1,000 tons of ore, which were reduced at the mill at Belmont, and yielded \$100,000. The whole of this ore was procured from the depth of 80 ft. The Transylvania No. 1 has been opened to the depth of 25 ft., and 15 tons of its ore have been worked with a yield of \$300 per ton. The Silver Bend company and the Combination company will each erect a powerful mill during the coming season.

Same of 19th: The Florida made its report for the month of February yesterday. Fifty-two tons of ore yielded 20 bars, valued at over \$20,000. Several small lots of chloride ore from Lander and Central hills, recently worked at the Keystone mill, yielded from \$250 to \$350 per ton.

Same of 20th: One ton of ore from the Summit Queen ledge, in Reveille District, yielded a bar of bullion valued at \$362.14. Nine bars, worth \$7,500, came in yesterday from the Twin River company's mill, at Ophir Cañon. By yesterday's stage 3,412 ozs. of crude bullion arrived from the mill of the Social and Steptoe company at Egan Cañon. The bullion contains about five per cent. of gold. The Harvard company has a vertical shaft 100 ft. deep on the Josephine ledge. The Bullion company have out a lot of good ore from the Fisherman ledge, which will be hauled to Austin for reduction. The work of transferring the 10-stamp mill of the Confidence company from Yankee Blado to the ground of the Twin Ophir company in Park Cañon is progressing.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of March 19th: A neat 30-oz. bar, containing—gold, \$44.15; silver, \$35.72—total, 79.87—was the product of two tons of ore from the Mount Blanc mine, just worked at Rigby's mill, taken without selection from the front ledge, 250 ft. from the mouth of the tunnel.

From same of 22d: Peter O'Reilly, well known as the man who, with Patrick McLaughlin, first uncovered the Comstock ledge at the point where the first rich sulphurets were found in the Ophir mine, has struck it again. The lead is situated below Carson City, on or near what is known as the Cradlebaugh Bridge road, in a group of low hills lying between Carson River and the foot of the Sierras. "Pete" ran a tunnel 60 ft. into a hill, where there was no sign of a ledge on the surface, and struck one showing rock, which yielded by mill process, at Silver City, \$18.50 per ton.

Same of 23d: A brick worth \$2,166.84, was the product of ore from the Occidental, a mine about a mile and a half from the Comstock, in the direction of Dayton.

The Eclipse Mining company, Gold Hill, are taking out a considerable amount of surface ore of a good quality, as is also the case at the Trench claim.

The combined shipments of Gold Hill and Virginia for the week ending yesterday, were 8 tons and 219 lbs., worth \$464,755.55—almost half a million dollars.

From the *Trespass* of March 19th: The Challenge Hoisting Works, Gold Hill, idle ever since the commencement of the storm, resumed work yesterday.

The Plato and Bowers companies, Gold Hill, are at work building a new dump with the patent discharge flues. It will be a great improvement on the former facilities for loading. A wagon can load and stand from under in five minutes from the time the gate is opened.

Same of 21st: Frank Denver, the contractor, has commenced work upon the Hoosier State mill, with a force sufficient to insure its completion in thirty days. The building is to be increased in size, and another battery of 10 stamps added. When finished, the mill will have 18 stamps, be capable of reducing 40 tons of ore daily, and be one of the best constructed mills in the county.

From the *Gold Hill News* of March 18th: A brick worth \$11,309.09 was the product of ore worked at the Piute mill the other day.

On Saturday we visited the Crown Point, Kentucky, and South Yellow Jacket. The ore from each of these mines is as good as ever has been taken from them at any time since they were first opened.

Same of 21st: We understand that there is a large body of good surface ore in the Alpha. Parties are running an incline. There is no change in the Bullion mine. There is not a mine in the State where there has been more work done without obtaining any ore as a set off against expenses, than in the Bullion mine.

Same of 23d: The new shaft of the Hale & Norcross company is further east than any other on the Comstock, being nearly or quite one-fourth of a mile east of the old works of the company. The ledge will not be struck by a perpendicular shaft in less than 200 ft., and perhaps not short of 300 ft. Since work was started it has never stopped an hour. The total cost of the improvements now being made will be nearly half a million of dollars.

#### OCEAN IRON CLIPPERS.—The iron clipper

ship *British Consul* arrived here a few days ago from Liverpool. She is the pioneer in a line of first-class ships of the kind which is intended to run between San Francisco and that port—projected by W. MacCann, a pioneer San Franciscan, and owned by the British Ship Owners' Company. This vessel is constructed wholly of iron, even to the masts and yards. Her dimensions (excluding fractions) are as follows: Length, 214 feet; breadth of beam, 36 feet; depth of hold, 22 feet. Her tonnage is 1,206 tons. She is spoken of as the handsomest English vessel that ever entered the Golden Gate. Every improvement that the ship-builder's art can boast has been, in her case, adopted. Fourteen of these ships will constitute the fleet of the line. The object of the enterprise is to obtain a share in the trade in fine goods from France and other European countries, which goods now come by way of Panama, at a freight of sixty or seventy dollars per ton. By this new line the freight will be reduced to sixteen dollars.

Mr. MacCann, the projector of this line, will be the Liverpool agent, and will be correspondent of the San Francisco Chamber of Commerce. Below we give the card in which this announcement is made:

CHAMBER OF COMMERCE, SAN FRANCISCO, CAL.,  
February 23d, 1867.

#### To whom it may concern:

This is to certify that Mr. Wm. MacCann was, on the 12th day of February, 1867, duly appointed by the Chamber of Commerce of San Francisco, Resident Correspondent of the Chamber for Liverpool, England.

The special object of Mr. MacCann's appointment and the creation of the position, is for the more thorough dissemination, throughout Europe, of information in regard to the resources of California, that immigration may be encouraged and mankind benefited.

Mr. MacCann's distinguished services in the matter of our mercantile marine, together with the high state of improvement brought about in that department through his efforts, makes his appointment peculiarly appropriate. Most respectfully,

[Signed,] RICHARD G. SNEATH, Pres't.  
Attest: WM. R. WADSWORTH, Sec'y.

Mr. MacCann commenced his efforts in this direction in 1863. He is now in this city, but goes forward at once to assume the duties of his office.

PACIFIC RAILROAD.—A New York telegram of March 22d, says that a 300-mile section of this road is let, and to be completed in 100 days from May 1st. There will then be a continuous line of railway from New York to the mining region of Colorado Territory; leaving only about 900 miles to complete the chain linking ocean to ocean.

The leaves of the pine-apple plant produce a fibrous material known and appreciated by the barbarous hordes of Africa and the semi-civilized Malays. The celebrated pine-apple cloth of the Philippines, resembling the finest muslin, is woven with the delicate fibers of the uncultivated pine-apple plant. This muslin is embroidered by the nuns of the convents of Manila with excellent skill and taste, so that the "pina" muslin of the Philippines has become a celebrated article of manufacture.

MARBLE IN PLACER.—J. R. Brown found a marble quarry the other day, five miles north of Auburn, Placer county.



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

C. W. M. SMITH. W. B. EWER. A. T. DEWEY.  
DEWEY & CO., Publishers.

OFFICE—No. 605 Clay street, corner of Sansome, 2d floor.

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One copy, six months, in advance,..... 3 00  
For sale by Carriers and Newsdealers.—25

**American and Foreign Patents.**—Letters Patent for Inventors can be secured in the United States and foreign countries through the Mining and Scientific Press Patent Agency. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. KNOX, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

Mr. L. W. Feltton, is an authorized agent for this paper, San Francisco, Jan 11th, 1866.

Mr. E. L. Smith, is a duly authorized agent for this paper, Portland, Oregon, Dec. 1, 1865.

Mr. Geo. F. Bates is a duly authorized agent for the Mining and Scientific Press, March 23, 1867.

Mr. J. M. Quay will act as agent for the Mining and Scientific Press from this date. March 23, 1867.

SUBSCRIBERS who do not receive the Mining and Scientific Press in due time, are requested to inform the publishers

## San Francisco:

Saturday Morning, March 30, 1867.

**MECHANICS' INSTITUTE.**—The new building was inaugurated on the evening of Tuesday, the 26th inst. A display of fireworks was made from the front of the building, before the exercises of the evening commenced. At 8 o'clock, the Hall on the first floor, which was gaily decorated with festoons of flowers and streamers, was filled with the invited guests; the Board of Supervisors, Judiciary and Navy Officers, and a large number of ladies, being among them. Rev. H. Stebbins opened with prayer. H. F. Williams read a paper, which gave a history in brief of the Institute from its inception to the present time. Hon. Nathan Porter delivered the Inaugural Address. Although extemporaneous, it was evidently not a carelessly prepared effort, and was worthy of the occasion. A good point made, was, that all scientific advance was dependent upon the artisan. Without his aid in the fashioning of instruments and apparatus, natural sciences of any kind could make no distinctly defined step forward. He believed, too, that the future glory of that nation which was to link, by railroads, Patagonia with Sitka, was in the hands of its educated mechanics.

The Poem, written for the occasion by Frank Soule, was, owing to the indisposition of the author, read by Prof. Knowlton, by particular request. It was entitled "Labor and Wealth." We give the first line, which, in itself, gives a complete and perfect idea of the whole:

"Who sings of Labor, sings of Wealth."

Parts of the Poem were very well read, and it was listened to with the greatest attention by every individual in that crowded audience. The exercises being concluded, another display of fireworks took place—this time by Messrs. Church & Clarke.

We shall not attempt in the present notice to do justice to the elegant rooms of the Institute, in a description which would be, perforce, brief. Suffice it to say, that they reflect the greatest credit upon their designers and arrangers. As we walked through them, we could not but feel that the lot of the citizen in this favored land is infinitely more enviable than that of the nobleman in any other. The true sovereign is the mechanic. Cotton no longer, but Iron, is king!

**HAZARD'S POWDER.**—Mr. E. H. Parker, No. 224 California street, has been agent for this powder, for this coast, during the last fifteen years. It is made of the best material, and has always been a favorite brand with both the mining and sporting community. The company intend to keep their agent well supplied and to maintain the past reputation of its powder.

## Difficulties in the Chlorination Process.

Much difficulty is often encountered in the chlorination process, in obtaining along with the gold a large precipitate of chloride of magnesium and lime. These minerals have long been known to have a greater affinity for chlorine than the gold itself; and consequently when they occur in large quantities, in the sulphurets, they involve the necessity for the use of a much larger amount of chlorine than usual; so much so as to add seriously to the cost of the process, aside from the annoyance of separating the products after the precipitate has been obtained. This difficulty has, doubtless, in some instances occurred where its true nature was not understood, and has resulted in great loss of gold. Perhaps there may be cases where sulphurets containing magnesium or lime have been submitted to a test process of chlorination, and have been pronounced as too poor to work. We have heard of one or two such cases, where much expense and delay have been incurred by our mine owners in consequence. In the instances alluded to, however, the true nature of the difficulty has since been learned, and the proper remedy applied.

The remedy is simple, cheap and efficient. Whenever sulphurets are to be submitted to this process, they should always be first examined for magnesium or lime; and if found to contain either, all that is required is simply to convert the magnesium and lime into a chloride, in the furnace, by the addition of salt (chloride of sodium)—proportioned to the quantity of magnesium or lime present—at the proper time. It will then go into the chlorination vat as a chloride, in which condition it is not taken up by the gas, and consequently does not interfere with the action of the chlorine on the gold. But if it goes into the vat as a carbonate (which it will do without the use of salt in the furnace), it takes up the chlorine so readily as to prevent the proper action of that gas on the gold—hence, the loss and trouble alluded to. Miners will do well to bear this fact in mind, as it may seriously interfere with the yield of their sulphurets, where they are subjected to the chlorination process, without due precaution as above.

**TREATMENT OF SULPHURETS.**—The Amador Ledger appears to be still in doubt with regard to the possibility of the successful working of auriferous sulphurets in California. We again assure our contemporary, most positively, that there is no portion of the globe in which such ores can be worked closer or more scientifically than in California. If the mines of Amador have sulphurets that will pay anything like the amount claimed by the Ledger, there will be no difficulty in having them worked in this city, or in finding persons here who can treat them successfully on the ground. Buyers can be found in San Francisco for all sulphurets that will assay from \$75 to \$100 to the ton, at prices that will well repay to save and transport them hither.

**THE SAN FRANCISCO GLASS WORKS.**—This important establishment, having just been subjected to extensive repairs, is now again in operation, and ready to receive orders for every description of hollow glass ware, such as German flint, prescription, vials, lamp chimneys, brandy and wine bottles, soda bottles, chemical ware, etc., etc. This branch of our home manufactures is becoming one of large importance, and is almost indispensable to numerous branches of business on this coast. As such its productions should always be selected in preference to those of eastern or foreign manufacture. See their advertisement in another column.

**PATENT OFFICE REPORT.**—We acknowledge the receipt of two copies of this report for 1862, from our Representative in Congress, Hon. D. C. McRuer.

## Mining Experiments.

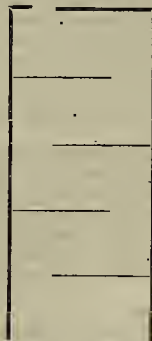
An unusual degree of attention is being directed at this time, throughout the Pacific Coast, to thorough and economical methods of roasting or desulphurizing ores; especially those containing gold and silver. The great cost involved in the construction and operation of the ordinary reverberatory furnace, and the limited extent of sulphurets requiring furnace treatment, usually found in any given locality, renders a thorough inquiry into this matter a thing of especial interest here. In the absence of any governmental establishment where experiments should be undertaken at public expense, for the benefit of the public, each person or company in this country is compelled to institute experiments at his own cost; hence, the necessity that experiments, whenever conducted, should be reported for the general benefit of all. There is one serious drawback, however, inseparable from this mode of obtaining information—the difficulty of procuring correct data.

The value of the report of an experiment depends upon its accuracy, and the minuteness of the detail. Unfortunately private experimenters are very seldom sufficiently careful in this particular, and the reporter is therefore unable to communicate results which will be altogether satisfactory. Such is particularly the case with the Brown's Valley experiments, which we gave in our issue of the 16th instant, and which are reviewed in another column of to-day's issue. Of course all such experiments can only be suggestive—they do not afford data for definite conclusions. The above remarks are also, to a certain extent, applicable to the furnace experiment which we now propose to give, and which our readers must take as they find it.

It is well known to most of our readers that Mr. Mosheimer has established a plant of metallurgical works at the North Beach, where he is engaged in working ores, in an experimental way, for such parties in the interior as may desire to have their ores so tested. Mr. M. has paid considerable attention to the various methods of roasting the ores submitted to him for treatment, and in so doing has used several different kinds of processes. The last which he has tried is an improvement of his own, which he calls

## THE UPRIGHT OR SHELF FURNACE,

In connection with a reverberatory. This furnace consists of an upright stack or chimney, from twelve to fifteen feet high, and three by four feet of interior sectional area. The two narrowest walls—three feet—are built up with shelves, two feet apart, and so arranged that the shelves on the opposite walls break joints, and overlap each other about eighteen inches. The arrangement of the shelves would consequently be represented by the following diagram:



A 15-foot furnace would consist of fifteen shelves. The feed is at the opening on the top. Just over each shelf is a small opening through which the operator can introduce a proper instrument to throw the sulphurets from one shelf to the next below, and so on to the bottom. This gradual movement of the mass, from top to bottom, answers the place of stirring. The bottom of the furnace consists of a reverberatory hearth, upon which the ore falls for its final and complete roasting. While the ore is

passing over the five or six lower shelves, it may be subjected to the action of a small jet of steam, which is introduced by means of proper pipes. We are assured by Mr. Mosheimer, that he is able to reduce his sulphurets in this furnace in about one-quarter of the time required by the reverberatory alone. The economy of fuel must be apparent to any one; and we are assured that thus far it has required less than one-half as much as the ordinary reverberatory. The attention necessary is not only much less than in the reverberatory, but it is much lighter, and may be safely entrusted to a boy; while in the old way an experienced and trustful man is required. Mr. Maltman, who is proprietor of chlorination works in both Nevada and Grass Valley, is now putting up one of these furnaces to take the place of his reverberatory; having been satisfied, after a careful inspection of the one at Mr. Mosheimer's works, that there is economy in it. The cost of such a furnace is not more than half that of a reverberatory, to do the same work. The difference in cost is saved by being able to do the same work with a reverberatory of 500 pounds capacity, which, without the upright shelf-stack, would require a reverberatory of 2,000 pounds capacity. The heat produced by the burning of the sulphur, is utilized in the upright or shelf-stack.

**PERSONAL.**—Among the strangers now sojourning in this city, we would particularly mention the name of Capt. J. R. Caldbeck, F. R. G. S., who has been for many years prominently connected with the Peninsular and Oriental Steam Navigation Co., most of the time in command of some one vessel of the fleet. Capt. Caldbeck—who, by the way, is a near relative of our Commissioner for the collection of mining statistics—arrived in this city by the Golden City, and will leave on Wednesday next, by the Colorado, en route for Singapore, where he will remain as resident manager of the Company's interest at that port. The Captain has taken a particular interest in the study and development of the condition and resources of the Pacific Coast of America—having, some two years ago, been sent out as Commissioner by some of the leading merchants and bankers of London, with the view of establishing more extensive steam communication between England and the ports of the Pacific. Having discharged the duties of that commission, he is now, as already observed, on his way to Eastern China, in the employ of the Company he has so long and so faithfully served in various positions of honor and trust.

We have every reason to believe that the Directors of that Company—whose headquarters are at 122 Leadenhall street, London—look with much favor upon the American steamship line just initiated between this port and China and Japan. They take a truly liberal and comprehensive view of the enterprise, and have no idea that it will in any way injuriously affect their own interests, but on the contrary, that it will result in establishing more intimate and more extensive commercial relations between the great centers of Asiatic populations and the Anglo-Saxon peoples of Europe and America, whereby their own Company, as well as the world at large, will be greatly benefited. Such improved commercial facilities cannot fail to add a great impetus to the travel and traffic between those opposite quarters of the globe. While we look for grand results to accrue to our own people and State from the pushing energy and popular prestige of Americans among the more facile peoples of China and Japan, we trust our English friends will never have occasion to look upon our growing interests there in any other light than that of friendly co-workers in the great work of elevating and bringing to the full standard of European civilization the countless millions of Oriental Asia.



**A PIONEER PROSPECTOR.**—J. M. Kirkpatrick, has shown us a splendid specimen of Rocky Mountain gold, weighing seven ounces four pennyweights, (value about \$128, being worth over \$18 per ounce.) It was taken from gold diggings in Montana, near head waters of Elk Creek, within 900 feet of the summit of the Rocky Mountain range. Mr. Kirkpatrick is one of the original discoverers of the famous Poorman lode, Owyhee, and has proven one of our most efficient prospectors. He intends this summer to start out on an exploring expedition through the district ranging above Fort Tejon. Mr. Kirkpatrick will only have a small party of working prospectors. He is thoroughly acquainted with the Indian ways and with their language, and prefers to go into their country with a few men of the right kind, rather than with a large and unmanageable crowd of those who are unacquainted with frontier life. It has become a maxim that large parties make small discoveries.

It is to such hardy prospectors as Mr. K. that we are indebted for the opening up of our resources. They take the initial steps, and lay out the work for those who come after. Restless spirits, they find their reward in the constant excitement of adventure; rarely laying up for themselves the gold and silver treasures which they point out to others.

**MANUFACTURE OF JEWELRY BOXES, ETC.** Very few, except jewelers, confectioners, and some others who deal in certain kinds of small fancy articles, are aware, perhaps, even of the existence of an establishment in this city for the manufacture from velvet, silk, morocco, and paper, of a certain class of goods, such as pocket-books, portfolios, boxes for silver sets, etc., etc.; much less of the number, variety and value of the products turned out from the same during the past ten years. Mr. Breidestien, the proprietor, whose rooms are at No. 652 Washington street, called our attention to a delicate little instrument for cleaning the glasses of spectacles, which seemed so much better suited for the purpose than one corner of a silk handkerchief, that a brief description may not be amiss. Two little circular pads stuffed with cotton and covered with chamois skin, are attached to the end of the arms of a zinc spring, which brings the faces of the pads gently together, when pressed by the hand. The glasses are inserted between the pads and cleaned effectually, almost by a single turn of the instrument.

**AGRICULTURAL IMPROVEMENTS, ETC.**—All interested in the development of the mining and agricultural interests of the coast, will be pleased to learn that Messrs. Baker & Hamilton, one of the oldest and most popular firms of Sacramento, and for many years known as extensive importers and dealers in engines, hardware, agricultural and other implements, have just opened a similar establishment in the large new structure, known as Yankee Block, on Front street, between Pine and Market. A fine cut of Wood & Mann's portable engines appears to-day, but too late to receive that attention we hope to give it hereafter.

**THE OAKLAND COTTON FACTORY.**—It was announced, some months since, that Mr. Rector, of the Oakland Cotton Factory, was making arrangements to introduce woolen, in addition to cotton machinery. The new machinery was received about three months since, and has just been put in operation. It is not the intention to make all wool goods, but only the mixed goods, known as "jeans." These goods, of our own manufacture, will soon be in the market.

**CALIFORNIA BLACKING.**—Messrs. Korn & Hawkins, "Sole manufacturers, San Francisco," have shown us a sample of this article made by them. They intend to turn out, not only Paste Blacking, but a liquid ditto, which will take the "shine" out of every thing else of the kind.

## BAKER & HAMILTON, IMPORTERS AND DEALERS IN Agricultural Implements, Portable Steam Engines, Hardware, RUBBER BELTING, Etc., Etc.

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### Wood & Mann's Portable Steam Engines, 6, 8, 10, 12 and 15 horse power,

With newly invented Water Bottom, which entirely surrounds the fire, grate and ash-pit, forming underneath the ash-pit, as up the sides of the furnace, a three or four inch water space, by which additional heating surface is obtained, the accumulation of sediment around the fire-box or furnace is entirely prevented and renders it perfectly safe to use near any barn, or in any farm yard, or in any building where a stove would be allowed, as no sparks can possibly escape from the furnace or ash-pit. The sediment has a free passage to the bottom of the fire box, and can be blown off daily by the blow off cock underneath the ash-pit, by which means the Boilers may be kept clean much longer than under the old system. The great saving in repairs which is effected by the use of these water bottom, and the constantly increasing demand for them, prove their superiority to any others yet constructed.

### Hoadley's Thrashing Engines.

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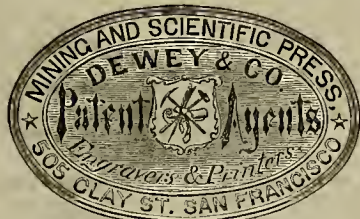
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Round Wire Rope—Iron or Steel, for Hoisting.

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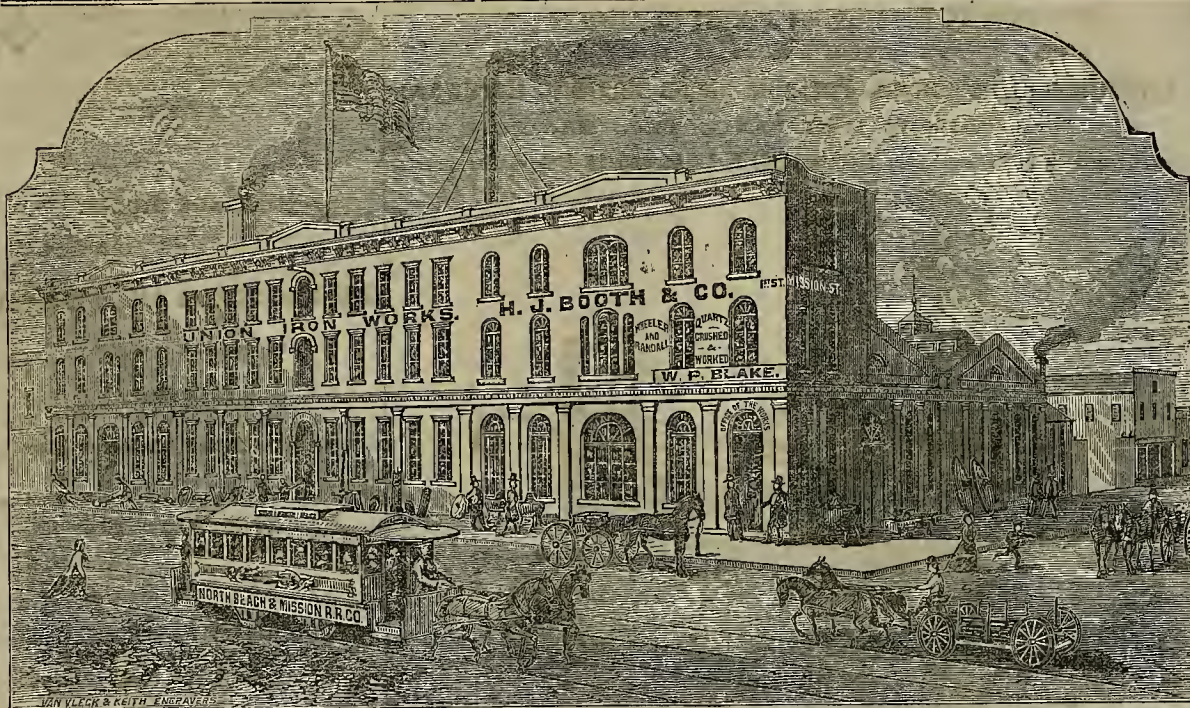
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2 6 3/4	1 3/4	5 1/2	1 1/2	2,300
2 8 3/4	2 1/4	6 3/4	1 3/4	3,400
3 1/2	2 3/4	8 1/2	2 1/4	5,300

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**BOILERS.**—Locomotive, Flue, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force pumps are manufactured by us. These very superior pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenus Wheeler's Improved flat bottom pan, Beldin's pan, Veatch's tubs, Prater's concentrators, Waklee's pans, Beck's pan, German Barrels, Astra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

24v12

IRVING M. SCOTT  
GEO. W. PRESCOTT  
H. J. BOOTH & CO.

### Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
**STEAM ENGINES AND QUARTZ MILLS**  
DUNBAR'S IMPROVED  
**Self-Adjusting Piston Packing.**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S  
**AMALGAMATOR AND SEPARATOR,**  
**Taylor's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**  
Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-1f

**WILLAMETTE IRON WORKS,**  
PORTLAND, OREGON.  
**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-1y One block north of Couch's Wharf.

**UNION IRON WORKS,**  
**Sacramento.**  
**WILLIAMS, ROOT & NEILSON,**  
MANUFACTURERS OF  
CROSS' PATENT BOILER FEEDER,  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.  
Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.  
**Dunbar's Patent Self-Adjusting Steam Piston**  
**PACKING**, for new and old cylinders, manufactured to order.  
Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**  
No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.  
Has always on hand a general assortment of PICKS for Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 18v13-y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.  
**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,  
—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.  
Special attention paid to Repairing. 24v13

**SAN FRANCISCO**  
**Foundry and Machine Works,**  
N. E. Cor. Fremont and Mission streets,  
Manufacturers of  
**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.  
—ALSO—  
**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.  
**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.  
**Dunbar's Improved Self-Adjusting Piston Packing**, requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.  
**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.  
6v11-1y **DEVORE, DINSMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**  
STOCKTON, CAL.  
**KEEP, BLAKE & CO.,**  
MANUFACTURERS OF  
**Quartz, Saw and Grist Mill Irons, Steam**  
**Engines, Horse Powers,**  
Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited and promptly executed.  
18v13-1y

**LEWIS COFFEY,**  
**LEWIS COFFEY & RISON,**  
**Steam Boiler & Sheet Iron Works.**  
THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.  
**V. CUSHING, Agent**  
For the Purchase and Shipping of Machinery OF ALL KINDS.  
SPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v11f

**J. O. HANSCOM, HANSCOM & CO.,** (T. FENDERGAST, H. S. SMITH, W. W. HANSCOM)  
**Etna Iron Works!**  
Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.  
Practical Machinists and Iron Founders,  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,  
Dunbar's Improved Self-Adjusting  
**PISTON PACKING.**  
Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.  
**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grinder and Amalgamator,**  
Which only needs examination to be appreciated.  
Tyler's Improved Water Wheel,  
Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.  
All Wheels warranted to give the power as set forth, or the money will be refunded.  
**Sole makers for this coast of the "Pendergast White Iron Stamp Shoes, and Dies."**  
None genuine unless obtained from us. Every one warranted.  
Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited. 18v12

**FULTON**  
**Foundry and Iron Works.**  
**HINCKLEY & CO.,**  
MANUFACTURERS OF  
**STEAM ENGINES,**  
**Quartz, Flour and Saw Mills,**  
**Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.**  
Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-qy

**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.  
**MARINE, Locomotive,**  
And all kinds of  
**HIGH PRESSURE Steam Boilers**  
MADE.  
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.  
All kinds of Sheet Iron and Water Pipe, Cast Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.  
**Old Boilers Repaired**  
**D. CAMERON.**  
6v12-1y

AN EXPERT.—Our readers will remember the article on auriferous sulphurets in our issue of Feb. 23d. We were reminded of the experiments therein detailed, and also of the ignorance which is too often exhibited on the subject, by the following from the *Alpine Miner* of a late date:

"Last summer, Mr. Wade of the Pioneer mill, Markleeville, obtained at great expense the services of an accomplished and experienced amalgamator, from Silver City, and on the assumption that there would be no bungling this time, several of our mining companies hauled their ores down for treatment. The Winchester Company, of this place, took down three tons, showing a value by assay of from \$6 to \$90 per ton, which underwent the skillful manipulations of this expert from Washoe, and turned out a lump of crude amalgam about as large as a chestnut. We were in the mill while the tailings were being run off, and noticing that the sluices ran an inch deep with bright, clear sulphurets, we asked the 'man on whom Alpine could rely,' if it might not be possible that the precious metals were in this ore, combined with these sulphurets, and were told that those were only iron pyrites and never contained anything of value!"

No CHANCE FOR THIEVES.—At the Nevada mill, Virginia, Nev., the amalgam strainers are encased in stout sheet iron, and furnished with a lid of the same material, kept secure from amalgam thieves by means of a padlock, the key of which is in possession of the foreman.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices  
In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**  
P. CLERC, R. KLEINCLAUS, W. DEBRIE.  
**CLERC & CO.,**  
Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery,  
No. 28 FREMONT STREET, San Francisco.  
9v145m  
**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Sternboat Rells and Combs of superior tone. All kinds of Trunks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.  
PRICES MODERATE. 24v13-1y  
V. KINGWELL J. H. WEED.

**JAMES MACKEN,**  
**COPPER SMITH,**  
No. 226 Fremont st., bet. Howard & Folsom  
All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
Repairing promptly and neatly attended to. 18v11

**JOHN LOCHHEAD'S**  
**Steam Engine Works,**  
Beale street, near Mission, San Francisco.  
**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.  
**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.  
The attention of the parties engaged in shipping or inland navigation is called to the  
**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**SKELETON LEAVES.**—Dr. G. Dickson, of Edinburgh, Scotland, communicates to the Botanical Society of that city, the following method of preparing these leaves: "A solution of caustic soda is made by dissolving three ounces of washing soda in two pints of boiling water, and adding one and a half ounces of quicklime previously slacked; boil for ten minutes, decant the clear solution and bring it to boil. During ebullition add the leaves; boil briskly for some time—say an hour—occasionally adding hot water to supply the place of that lost by evaporation. Take out a leaf, and put it into a vessel of water, and rub it between the fingers under the water. If the epidermis and parenchyma separate easily, the rest of the leaves may be removed from the solution and treated in the same way; but if not, then the boiling must be continued for some time longer. To bleach the skeletons, mix about a drachm of chloride of lime with a pint of water, adding sufficient acetic acid to liberate the chlorine. Steep the leaves in this until they are whitened (about ten minutes,) taking care not to let them stay in too long; otherwise they are apt to become brittle. Put them into clean water, and float them out on pieces of paper. Lastly, remove them from the paper before they are quite dry, and place them in a book or botanical press."

**ITALY VS. ENGLAND.**—An Italian house has carried off an enormous contract for basin, docks, factories and other works connected with the enlargement of the Chatham (Eng.) dock-yard, over the heads of the English bidders.

There are nearly twice as many papers published in the United States as in the rest of the world put together.

**To Owners of Copper Mines and Smelting Works.**

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for Smelting Copper. Address "W," care of Mining and Scientific Press. 5v141f

**B. F. HOWLAND, PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

**Enamelled Cards.** Ambrotypes and San Parks executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cards de Visites only \$2 per dozen; Vignettes at \$4 per dozen. We warrant our work to be superior to any made in this city or State. 63—Give us a call and see our specimens. 5v13-6m

**J. S. PHILLIPS, O. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Reference—B. W. Munoz, 528 Clay street, San Francisco, Humboldt City, Nevada. 5v141f

**The Mercantile Gazette**

—AND—  
**PRICES CURRENT,**

**E. D. WATERS & CO., Prop'rs.**

E. D. WATERS, Sen. T. F. CRONISE. J. H. GARMANY,  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**

PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

**THE LETTER SHEET PRICES CURRENT**

For enclosure in letters, is also published every  
STEAMER DAY.  
13v131f

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices, varying from \$1.50 to \$2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
2v12 F. E. WEXOANT, Proprietor.



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Green Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

GODDARD & COMPANY.

## ROWLAND, WALKER & CO., GROCERS,

Nos. 516 and 518 Washington street,

Also offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits.  
22v13-1y

## NEW YORK PRICES.

**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**

## AMERICAN WATCH FACTORY.

A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory  
prices. Also,

ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains  
and Jewelry. 25v10-6m

**NEW YORK PRICES.**

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

## PRICES REDUCED!

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Bolt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4½ to 6 inch barrel; Rifle Cases—an entirely new model—having a range and accuracy equal to a rifle, and a most perfect Cam. All the new models for sale very low.  
12v131f

ALBERT E. CRANE.

**Economy in Advertising.**—The Mining and Scientific Press is the best and most economical mining advertising medium in this city. Our terms are less than one-half the rates now charged by daily newspapers, and the mining community are beginning to appreciate our reasonable rates of advertising. The Press contains proportionally a larger amount of mining advertising than any other paper on the Pacific coast. Its character renders it the proper journal for the concentration of mining patronage.



## RADICAL CURE

—OF—

## RUPTURE!

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 624 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

DR. A. FOLLEAU

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.

He has no connection with any Agency. 8v13-ly11p

## MEUSSDORFFER,

Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE

On Saturday, February 9, 1867,

An Entirely New Style of  
**Cloth Cashmere Hat**

"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.

Call and see them. 8v14



**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**

(706 Sansome St. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

Copartnership Notice.

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO. for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m

## Baldness! Baldness!!

CAN BE PREVENTED, BY USING

## Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

W. E. MAYHEW, Druggist,

N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles 16v13-6w

## REPORT

—OF THE—

## COMMITTEE

—ON—

## SEWING MACHINES!

California State Fair, 1866:

"TO THE PRESIDENT OF THE STATE AGRICULTURAL SOCIETY: Your Committee on Sewing Machines beg leave to report that we have examined the several Sewing Machines on exhibition, (the Grover and Baker, the Wheeler & Wilson, and the Florence,) and find that

FOR GENERAL FAMILY USE!

—THE—

## "FLORENCE"

—IS—

"THE BEST."

(Signed)

J. N. ANDREWS,  
THOMAS G. McHALE,  
L. ELKUS.

If there is a FLORENCE SEWING MACHINE within one thousand miles of the San Francisco Office, that is not working well and giving perfect satisfaction, it will be attended to, if I am informed of it, without expense to the owner.

SAMUEL HILL,

General Agent, 111 Montgomery street, San Francisco. 17v13

## GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes.

The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half the price required to pay at hotels. 17v13-6m

SANBORN & CO.

Attention! Attention! Attention!

Look to Your Health in Time!

HEALY'S CURATIVE OIL, FOR THE SURE AND speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism?

Use Healy's Curative Oil!  
Have you the Headache? Use Healy's Curative Oil!  
Have you a Sore Throat? Use Healy's Curative Oil!  
Have you the Toothache? Use Healy's Curative Oil!  
Are you subject to Cramps? Use Healy's Curative Oil!

For the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless "H. L. O." is stamped on the cork and the fine simile of FRANK HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drug gists and Grocers. Price, \$1. 2v141-10p



## STANDARD SOAP COMPANY'S WASHING POWDER,

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleansing. It is made of pure material and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1½ each, and in wooden boxes of 10 to 15 lbs. Ask your grocer for a package, and test its efficacy. Manufactured at 204 Sacramento street San Francisco. 15v12q

## Blanks, Blank Mining Books,

Constitution and By-Laws

—FOR—

## Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the  
Mining and Scientific Press.

Orders from the interior faithfully attended to.





OF MILWAUKIE.

OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1867, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14qtrfclz2p

## Professional Cards.

SHERMAN DAY,  
Mining Engineer,

No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
224\*

## FREDERICK MANSELL.

Mechanical & Architectural Draughtsman,  
No. 422 California street, corner of Leidsdorff.  
Drawings of MODELS made for parties applying for pa-  
ents at Washington or London. mar23-tf.

GREGORY YALE,  
Attorney and Counsellor at Law,

No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

V. E. JOYCE,  
NOTARY PUBLIC,

N. E. cor. of Washington and Battery sts.  
12v14tf SAN FRANCISCO.

JAMES M. TAYLOR,  
Attorney and Counsellor at Law,  
COURT COMMISSIONER, appointed by the Fourth District  
Court, COMMISSIONER OF DEEDS for Nevada  
and Massachusetts.

Court Block, San Francisco.  
Entrances opposite City Hall, Merchant street, and 636  
14v14tf Clay street.

W. E. GOLDSMITH,  
Card and Seal Engraver,  
505 Montgomery street, up-stairs, (over Tucker's),  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

## GEORGE H. POWERS, M. D.,

Oives exclusive attention to  
Diseases of the Eye.  
Office, southwest corner of Bush and Mont-  
gomery streets, Room 7 and 8. Office hours, 10½ to 12, and  
2 to 4 o'clock.  
References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and  
L. B. Benchley. 4v13tf

## Preserve Your Sight!

C. MULLER, Optician,  
205 Montgomery Street, - - Russ Block,  
Invariably suits the Eyes by a proper selection of his  
Glasses. Price of Perfect Glasses, \$2.50 and upward.  
Sent pre-paid to any post office on the Coast. Applicants by  
mail will receive a circular containing directions, etc.  
Address, C. MULLER, Optician,  
2v14tf 205 Montgomery street, San Francisco.

## DR. H. AUSTIN,

DENTIST,  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-qy

## DR. A. HARTMAN,

Electro-Magnetic Physician,  
CURES ALL CURABLE DISEASES, BY THE CONJUG-  
uration of the vital forces. Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
made to walk, and the sick healed. Come and see the af-  
flicted at the rooms. They will speak for themselves. The  
poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating  
rooms, 410 Kearny street, between Pine and California.  
2v13m

## Metallurgy.

## Pacific Chemical Works.

FALKENAU & HANKS,  
Desire to call the attention of Druggists, Manufacturers,  
Metallurgists, Millmen, Assayers, Chemists and  
Students, to their

ANALYTICAL LABORATORY,  
And Establishment for the manufacture of Pure Reagents,  
Pharmaceutical Preparations,  
And all CHEMICALS used in the Arts. They are prepared  
to make Chemical investigations,  
Analyses and Assays,  
Of every description, and to give advice upon all matters  
pertaining to Technical Chemistry.

Office, 629 Washington street; Laboratory, Corner of  
3v14-tf Center and Folsom streets.

BOALT & STETEFELDT,  
Metallurgists and Mining Engineers

AUSTIN, NEVADA.  
Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 1v1v1

G. W. MAYNARD, J. B. TIEMANN,  
MAYNARD & TIEMANN,

Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
19v12-1y

EUROPEAN  
METALLURGICAL WORKS,

Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphuret, pyrites, and the (so-called) "rebel-  
lous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, refining by cupellation, done at moderate rates.

## PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting, re-  
fining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.

S. P. KIMBALL, J. R. MURPHY,  
10v10

MOSHEIMER'S  
Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.

Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurets.

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J. MOSHEIMER,  
Engineer and Metallurgist.  
26v13-3m

## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.

## CAPITAL STOCK, - - - \$500,000

Trustees:  
H. P. WAKELEE, THOS. H. SELBY,  
NICHOLAS LUNING, THOS. BELL,  
CHAS. E. McLANE.

H. P. WAKELEE.....MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office only for Chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the ad-  
vantages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14-3m

Favorable to Inventors.—Persons holding new in-  
ventions of machinery and important improvements, can  
have the same illustrated and explained in the Mining and  
Scientific Press, free of charge, if in our judgment the  
discovery is one of real merit, and of sufficient interest to  
our readers to warrant publication.

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Paper Rulers and Blank Book Manufacturers.  
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(SUCCESSOR TO O. GORI)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Monuments, Tombs, Plumber's Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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Barstow's Metallic Burial Caskets and Cases,  
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Maker of Models for Inventors.  
MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
OSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair-  
ing of machinery promptly attended to.  
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ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
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SOLE MANUFACTURERS OF THE CELEBRATED  
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Natoma Street and North Beach,  
SAN FRANCISCO.  
2v13-3m

Pacific File, Reaper and Mower Section  
MANUFACTORY,

No. 53 Beale Street, Between Market and Mission,  
SAN FRANCISCO.  
Files Recent and warranted as good as new, or no charge.  
The only establishment in the State. We also man-  
ufacture Reaper and Mower Sections.  
S. BENSON & CO., Prop'rs.  
12v14-3m

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ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

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No. 801 Battery street,  
SAN FRANCISCO.  
13v13-3m

SAN FRANCISCO  
Cordage Manufactory!

CONSTANTLY ON HAND A LARGE ASSORTMENT

—OF—  
MANILA CORDAGE,

Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.

Office, at TUBBS & CO'S, 611 and 613 Front street.  
Manufactory at the Potrero. 11v14-1q

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Established 1849.

C. NUTTING,

Manufacturer of

Fire-Proof Doors and Shutters,

BANK VAULTS, PRISON CELLS, BALCONIES, AWN-

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CARDS \$3

Per 1,000

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Lower Rates

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PRINTERS,

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Low Prices.

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6v14tf SAN FRANCISCO.

WM. A. KOLLMYER,

LOOKING-GLASS

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PICTURE FRAME MAKER,

No. 41 Third street,  
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McNALLY & HAWKINS,

Plumbers and Gas-Fitters,

No. 645 Market street,  
Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
19v13-2q

SILVER SPROUT MINING Co.—This com-  
pany, which filed its certificate of incorpora-  
tion with the Clerk of the County Court, on  
the 27th inst., has for its object the working  
of gold and silver mines in the Kearsage  
mining district, Inyo county, Cal. The  
capital stock is two hundred and fifty thou-  
sand dollars, in two hundred and fifty  
shares, one thousand dollars each. The  
trustees are as follows: Nathaniel Page, A.  
Wingard, F. H. Alberding, W. N. Wade  
and Almarin B. Paul.

NORRIDGEWOOD MINING Co.—This com-  
pany filed its certificate of incorporation on  
the 26th inst. It proposes to work the Mat-  
tingley ledge, in Nevada county, two miles  
from Nevada city. Capital stock, \$20,000,  
divided into 2,000 shares of \$10 each.  
Trustees: J. W. Clark, George H. Weaver,  
and James E. Perkins.

ROYAL PRUSSIAN SCHOOL OF MINES.—We  
acknowledge the receipt from Messrs. Ad-  
delberg & Raymond, of New York, and Mr.  
Chas. A. Stetefeldt, of Austin, Nevada—of  
copies of a pamphlet concerning the Claus-  
thal School of Mines, mentioned in our last  
issue.

## A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in  
the State, is offered for sale on desirable terms. The jour-  
nal is the oldest in the county, is situated at the County  
Seat, and surrounded by one of the most prosperous and  
promising Quartz and Gravel Mining Districts in the State.  
Inquire at the office of the Mining and Scientific Press; or ad-  
dress DEWEY & VAUGHN, Mountain Messenger office, Dow-  
neville, Sierra County, Cal. 7v14tf

## To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS  
County, with steam mill fitted up with Amalgamating  
Pans, etc., FOR SALE. The mine has three main veins, and  
more than \$50,000 have been spent in erecting them and com-  
pleting the mill. Good wagon roads all the way. Apply to  
BELLOC FRERES, Bankers,  
535 Clay street, San Francisco.  
23v13-6m

## Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
steady and successful experience in working and superintend-  
ing and is prepared to give the most reliable and practical  
advice in saving sulphurets and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz mill operator. Address, F. M. SHAW,  
San Francisco, care Mining and Scientific Press. 19v14-3m

Pacific Mail Steamship Co's  
THROUGH LINE TO NEW YORK,

Carrying the United States Mail.

LEAVE FOLSOM STREET WHARF, AT 11

O'CLOCK A. M. of the following dates, for

PANAMA, connecting via Panama Railroad, with one of

the Company's splendid steamers from ASPINWALL for

NEW YORK.

On the 10th, 18th and 30th of each month that has

30 days.

On the 10th, 18th and 30th of each month that has

31 days.

When the 10th, 18th and 30th fall on Sunday, they will

leave on Saturday preceding, when the 18th falls on Sun-  
day, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at

Manzanillo. All touch at Acapulco.

Departures of 18th or 30th connect with French Trans-

Atlantic Co.'s steamer for St. Nazaire, and English steamer

for Southampton.

Departure of 10th connects with English steamer for

Southampton, and P. R. Co.'s steamer for Central

America.

Departure of the 20th connects with English steamer for

Southampton, and P. R. Co.'s steamer for Central

America.

The following Steamships will be dispatched on dates as

given below:

March 30th—GOLDEN AGE, Capt. Jas. T. Watkins,

connecting with the RISING STAR, Capt. Farrier,

Cabin passengers berthed through. Baggage checked

through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attend-

ance free.

These steamers will positively sail at 11 o'clock. Passen-

gers are requested to have their baggage on board before 10

o'clock.

Through Tickets for Liverpool by the Inman Line, can be

obtained at office P. M. S. S. Co., San Francisco.

For Merchandise and Freight apply to Messrs. WELLS,

FAROE & CO.

The splendid steamship COLORADO will be dis-

patched on WEDNESDAY, April 3, 1867, for Hongkong, via

Kanagawa, carrying passengers, mails and freight.

For passage and all other information, apply at the Pa-

cific Mail Steamship Co's office, corner of Sacramento and

Leidsdorff streets.

OLIVER ELDRIDGE, Agent.

TO VICTIMS OF RHEUMATISM IN  
ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH  
this terrible and excruciating disease, that the means  
of a safe, speedy and permanent cure are within the reach  
of every sufferer, by using

RICHARDS' REMEDY!

For Inflammatory, Chronic, Hereditary and Mercurial  
Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all  
the modifications of the disease, whether confined to one  
portion of system or entire in its character. Combined  
wholly of VEGETABLE EXTRACTS, it exterminates the  
complaint without injuring the constitution. None but the  
TORTURED SUFFERERS who have been relieved from  
the agony by the operation of this remedy, can realize the  
ecstasy which the mere cessation of long-continued tor-  
ment imparts. Sleep returns, strength returns, health and  
hope return to the pain-worn and debilitated patient, and  
once cured, nothing but the grossest impudence can lead  
to a relapse. The confidence with which these statements  
are made to the public, is the result of many years' ob-  
servation and experience. The reputation of mere palli-  
atives soon dies out, but that of a STEERING MEDICINE,  
which produces, year after year, in all cases, the same ben-  
eficial effects, NEVER DIES. This has been the history of  
Richards' Remedy. Try it!

RICHARDS' REMEDY is for sale by  
H. BOWMAN, Druggist, Sacramento,  
and by Druggists generally.

11v15



## Mineral Land Law Blanks FOR SALE.

We are prepared to furnish any of the following blanks used in securing patents for lands under the National Mineral Land Act of 1866:

- I. Applicants' Declaratory Statement.
- II. Diagram, Description of Diagram and Boundaries, and Notice.
- III. Register's Order for Publication—with Notice.
- IV. Deposition that Notice has been Posted.
- V. Application for Survey Etc.

Prices.—Single blanks, 10 cents; 75 cts per dozen; \$4 per hundred—postage paid.  
Pamphlet containing the Law and the Instructions of the General Land Commissioner, post paid, 25 cts. Address **DEWEY & CO.,** Mining and Scientific Press, San Francisco.

**Beware of Counterfeits!**—NOTICE TO THE PUBLIC.  
Healy's Rheumatic Lintment having been imitated (poorly, however), by an inferior and pernicious article, and sold in this market for the genuine, the proprietor of Healy's Rheumatic Lintment has made an alteration in the general Trade Mark, and also substituted for Rheumatic Lintment "Curative Oil." This Great Remedy will be known hereafter as "HEALY'S CURATIVE OIL." 13414r

### Subscribe at Once!

From the commencement of Volume XIV of the Mining and Scientific Press, only a limited number of copies will be saved for files by us; consequently those who desire the paper for future as well as present value, should subscribe at once.

## New Mining Advertisements.

### Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Amount.
Camp, Jas.	72	5	\$100.00
Drumhouse, J. A.	6	3	60.00
Drumhouse, J. A.	54	60.00	
Harker, W. B. C.	23	10	20.00
Harker, W. B. C.	24	10	20.00
Harker, J. W.	134	3	60.00
Jacobson, S. B.	85	80.00	
Fassett, N. C.	132	1	20.00
Gray, Asaph	133	3	60.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

### Diana Gold and Silver Mining Company, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the third day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the fourth day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

### San Mineral Silver Mining Company.—Location of Works: San Marcial, District of Hermosillo, State of Sonora, Mexico.

Notice.—There are delinquent upon the following described stock on account of assessment levied on the thirteenth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Amount.
Harris, Ben. E.	223	27	13.50
Harris, Ben. E.	237	100	50.00
Harris, Ben. E.	281	100	50.00
Harris, Ben. E.	303	150	75.00
Harris, Ben. E.	317	17	8.50

And in accordance with law, and an order of the Board of Trustees, made on the thirteenth day of January, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on the thirteenth day of March, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. m9

Notice is hereby given, that the above sale is postponed until Saturday, the 13th day of April, 1867, at the same hour and place. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
San Francisco, March 29th, 1867. mar30

### Whitcomb Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fourteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Amount.
Allen, H. H.	13	20	\$30.00
Allen, H. H.	199	30	90.00
Camp, Jas.	139	6	90.00
Johnson, Geo. H.	212	4	60.00
Sutton, Wm. R.	41	60.00	
Turner, Anna Key.	59	4	60.00
Williams, J. J.	291	32	480.00
Doane, J.	233	43	650.00
Jacob, S. W.	183	30	450.00
Drumhouse, J. A.	216	2	15.00
Fassett, N. C.	215	1	15.00
Gray, Asaph	217	1	15.00
Harker, J. W.	244	20	300.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on Tuesday, the twenty-first day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

## Mining Notices—Continued.

### Big Blue Lead Gold and Silver Mining Company, Coeur d'Alene District, Kootenai County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of February, 1867, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-third day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. m1

### Cosala Silver Mining Company, Cosala District, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of March, 1867, an assessment of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to Charles Bax, Secretary, at the office of the Company, 310 Battery street, opposite the Custom House, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirteenth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the thirtieth day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. BAX, Secretary.  
Office, No. 310 Battery street, opposite the Custom House, San Francisco, California. mh16

### Emilia Mining Company, State of Guerrero, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 20th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm. Booth.	233	50	\$25.00
Wm. Booth.	234	50	25.00
Wm. Booth.	237	10	7.50
Wm. Booth.	238	10	7.50
Wm. Booth.	239	10	7.50
Wm. Booth.	240	15	11.25
E. Schneider.	239	100	50.00
Saint Theodore.	10	20	10.00
Saint Theodore.	11	20	10.00
Philip Degen.	13	60	37.50
H. Kuntzer.	16	20	10.00
J. O. McFarlan.	bal 146	50	25.00
E. Hirsch.	19	15	7.50
L. Hirsch.	20	20	10.00
P. Sasser.	21	20	10.00
P. Sasser.	23	30	15.00
Joseph Bank.	bal 23	20	10.00
A. Wiener.	bal 31	10	5.00
B. Cunningham.	bal 124	40	20.00
B. Cunningham.	bal 130	30	15.00
B. Cunningham.	bal 131	20	10.00
B. Cunningham.	bal 132	20	10.00
B. Cunningham.	bal 133	30	15.00
B. Cunningham.	bal 134	30	15.00
B. Cunningham.	bal 135	40	20.00
B. Cunningham.	bal 136	25	12.50
B. Cunningham.	bal 137	25	12.50
B. Cunningham.	bal 138	25	12.50
Jacob Knell.	bal 173	60	45.00
Jacob Knell.	bal 200	5	3.75
Jacob Knell.	bal 204	5	3.75
Jacob Knell.	bal 212	10	7.50
Justus Depter.	bal 74	100	50.00
C. Ringel.	bal 75	50	25.00
C. Ringel.	bal 135	50	25.00
C. Ringel.	bal 137	50	25.00
C. Ringel.	bal 138	50	25.00
C. Ringel.	bal 139	55	41.25
C. Ringel.	bal 140	15	10.00
C. Ringel.	bal 141	20	15.00
C. Ringel.	bal 142	5	3.75
C. Ringel.	bal 143	10	7.50
C. Ringel.	bal 144	10	7.50
C. Ringel.	bal 145	10	7.50
C. Ringel.	bal 146	10	7.50
C. Ringel.	bal 147	10	7.50
C. Ringel.	bal 148	10	7.50
C. Ringel.	bal 149	10	7.50
C. Ringel.	bal 150	10	7.50
C. Ringel.	bal 151	10	7.50
C. Ringel.	bal 152	10	7.50
C. Ringel.	bal 153	10	7.50
C. Ringel.	bal 154	10	7.50
C. Ringel.	bal 155	10	7.50
C. Ringel.	bal 156	10	7.50
C. Ringel.	bal 157	10	7.50
C. Ringel.	bal 158	10	7.50
C. Ringel.	bal 159	10	7.50
C. Ringel.	bal 160	10	7.50
C. Ringel.	bal 161	10	7.50
C. Ringel.	bal 162	10	7.50
C. Ringel.	bal 163	10	7.50
C. Ringel.	bal 164	10	7.50
C. Ringel.	bal 165	10	7.50
C. Ringel.	bal 166	10	7.50
C. Ringel.	bal 167	10	7.50
C. Ringel.	bal 168	10	7.50
C. Ringel.	bal 169	10	7.50
C. Ringel.	bal 170	10	7.50
C. Ringel.	bal 171	10	7.50
C. Ringel.	bal 172	10	7.50
C. Ringel.	bal 173	10	7.50
C. Ringel.	bal 174	10	7.50
C. Ringel.	bal 175	10	7.50
C. Ringel.	bal 176	10	7.50
C. Ringel.	bal 177	10	7.50
C. Ringel.	bal 178	10	7.50
C. Ringel.	bal 179	10	7.50
C. Ringel.	bal 180	10	7.50
C. Ringel.	bal 181	10	7.50
C. Ringel.	bal 182	10	7.50
C. Ringel.	bal 183	10	7.50
C. Ringel.	bal 184	10	7.50
C. Ringel.	bal 185	10	7.50
C. Ringel.	bal 186	10	7.50
C. Ringel.	bal 187	10	7.50
C. Ringel.	bal 188	10	7.50
C. Ringel.	bal 189	10	7.50
C. Ringel.	bal 190	10	7.50
C. Ringel.	bal 191	10	7.50
C. Ringel.	bal 192	10	7.50
C. Ringel.	bal 193	10	7.50
C. Ringel.	bal 194	10	7.50
C. Ringel.	bal 195	10	7.50
C. Ringel.	bal 196	10	7.50
C. Ringel.	bal 197	10	7.50
C. Ringel.	bal 198	10	7.50
C. Ringel.	bal 199	10	7.50
C. Ringel.	bal 200	10	7.50

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the eighth day of April, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

MAX. BURCKHARDT, Secretary.  
Office, Room No. 1, Crim House, No. 523 Kearny street, San Francisco, Cal. mar23

### Gold Quarry Company, Location of Works: Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of March, 1867, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, (Room No. 4) No. 706 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.  
Office, Room No. 4, 706 Montgomery street, San Francisco, Cal. mar23

### Stock Certificates, Stock Transfer Journals, Stock Ledgers, Assessment Receipts,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press.

Office, 402 Front street, San Francisco. mar30

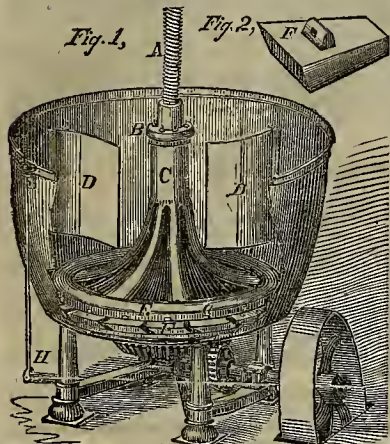
### George Washington Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, Cal.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fifth day of February, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Adams, C. P.	114	5	\$17 50
Arnold, W. W.	322	10	35 00
Boggs, A. G.	67	11	38 50
Bell, John.	35	3	17 50
Brayton, J. G.	325, 378, 10-ea	20	70 00
Brayton, J. H.	379, 380, 5-ea	10	35 00
Christianson, P.	115	15	52 50
Christianson, P.	176	10	35 00
Grigg, E. D.	190, 326, 10-ea	20	70 00
Grigg, E. D.	191	10	35 00
Grigg, E. D.	190	10	35 00
Haskin, D. L.	94	5	17 50
Hutchinson, S. A.	240	10	35 00
Nylett, James.	32	15	52 50
Phillips, W. L.	92	10	35 00
Risley, J. B.	369	4	14 00
Risley, J. B.	370	11	38 50
Smittle, J. W.	373	11	38 50
Sutherland, John.	401	5	17 50
Whitton, M. S., 185, 186, 187, 188			
189, 190, 191, 192, 193	194	130	455 00
Whitton, W. T.	241	10	35 00
Williams, Samuel.	390	30	105 00
Wilson, G. C.	29	20	70 00
York, John.	276	5	17 50



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miller's Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v14tf

HUNTER'S  
IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating gold or silver ore on shares, receiving a certain per cent. of the sulphurets may be agreed upon, and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

Persons who have sulphureted ores will do well to have their sulphurets saved; as the many failures in mining can often be attributed to the waste of sulphurets. For particulars, address

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs.

ANDREW HUNTER, Inventor, 22v13-3m San Francisco.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY, San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,

Beale Street, San Francisco. 23v12 3m

BRUCKNER'S  
Mechanical Roasting Furnace

AWARDED A

PREMIUM SILVER MEDAL

—BY THE—

The Mechanics' Institute.

Patented December, 1896,

THESE FURNACES ARE NOW MANUFACTURED AFTER AN IMPROVED mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION,

and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

THE IMPROVED FURNACE

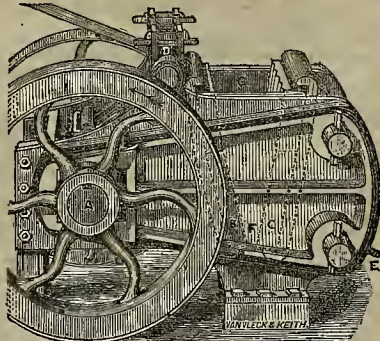
May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

I. KALLENBERG,

19v12 416 Market street, San Francisco.

## Brodie's Patented Improvements



FOR THE TREATMENT OF

## Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this improved Machine for breaking or Spalling Quartz or other Rocks, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low terms: No. 1—Or 10 inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600. No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour—850. No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour—1,300.

EXPLANATION OF THE ABOVE ENGRAVING.

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass direct to the dotted lines showing the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated. The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco. The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county: "I have used your Crushers at the Rawhide Ranch, and they have given me great satisfaction. They are the best I have ever used, and I have no hesitation in recommending them to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. F. JOHNSON, Supt. Rawhide Ranch Quartz Mill."

JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months and one of your latest size Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. F. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1894. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1896, the royalty charged for using the same will be raised to the sum of \$10 per barrel. A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1895.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers. A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 29th, 1895.

Express Building, 402 Montgomery street, San Francisco. 12v13tf

## Foundry for Sale.

A One-half Interest in the

## UNION IRON WORKS,

SACRAMENTO,

Owned by William R. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 55 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address WILLIAM R. WILLIAMS, Sacramento, Cal. 26v13tf-19p

## Notice to Miners,

## Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, and am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done. M. PRAG, 8v13-1y Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,

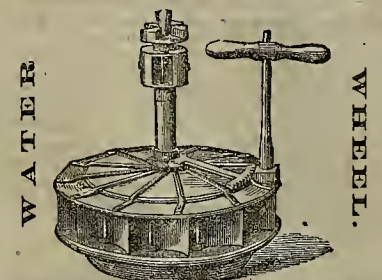
Corner First and Mission streets, or Box 2,077 8v13tf SAN FRANCISCO.

## Brown's Filtering Heater!

FOR PREVENTING INCrustation IN STEAM BOILERS, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. One inch of the Filter is soon saved in fuel and boiler-repairs alone.

It is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to

AUSTIN A. WELLS, Agent. 5v14-1y

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALED AND UNRIVALED IN the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc. CALIFORNIA EXPERIENCES.—E. Stocton, Folsom; O. Simmons, Oakland; (Mill at Clear Lake); Morgan, Colville, Lexington, Santa Clara County; J. Y. McMillan, Lexington Santa Clara County. Send for Circular, to KNAPP & GRANT, Agents for California. 26v13-1yq 310 Washington street, San Francisco

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m JAMES HITCHENS.

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shoes and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission. Ores, in lots not exceeding 2,000 pounds, tested by 22v13 O. W. STRONG, Assayer.

STEAM HOISTING APPARATUS.  
A Hoadley 15-Horse Power  
PORTABLE ENGINE,

With V Friction Hoisting Gear, 4-foot Drum,

LATEST IMPROVEMENTS,

Has been used for a month,

For Sale Cheap!

On account of previous purchaser who suspended work TREADWELL & CO., Corner Market and Fremont streets, San Francisco. 1v14-1m

## NELSON &amp; DOBLE,

AGENTS FOR

## Thomas Firth &amp; Sons' Cast Steel, Files,

Etc., Shear, Spring, German, Flow, Blister and Toe Call Steel; manufacturers of Mill Picks, Sledges, Hammers, Picks, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools, 319 and 321 Pine Street, Between Montgomery and Sansome, San Francisco. 1v14-1p

## FOR SALE!

PATENT RIGHT OF HUNT'S WINDMILL for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to E. O. HUNT, 28 SECOND STREET, 1v14-1m San Francisco.

## Nitro-Glycerin!

WE ARE INFORMED THAT CERTAIN PERSONS ARE endeavoring to manufacture and sell Nitro-Glycerin, to be used for Explosives in Oil Wells, Blasting or other purposes.

This is to notify the public that the United States Blasting Oil Company is the sole owner of the Nobel Patents for manufacturing Nitro Glycerin, and for exploding the same; and that any and all infringements of the Company's rights will be prosecuted in law.

The Company is now prepared to supply any desired quantity of the best quality of Nitro-Glycerin to the public, with instructions how to use it and avoid accidents. Orders to be addressed to JAMES DEVEAU, Secretary, 32 Pine street, New York.

T. P. SHAFER, President U. S. Blasting Oil Company, 32 Pine street, New York. 1v14-1m

## Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Coils and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 524 Sacramento street, opposite What Cheer House, San Francisco. 1v14-1y

STREET RAILROADS IN ENGLAND.—The English prejudice against street railroads is fast giving away before the logic of events. The authorities of London, after putting themselves in communication with the city officials of various American towns and cities, in which these modern conveniences have been introduced, have come to the conclusion that, after all, they are something more than mere "Yankee notions." The English are a slow people with regard to social improvements; and usually hesitate long before introducing any innovations into their long established customs and ways of doing business. We may instance, as a case in point, their persistence in employing closed cars upon their railroads, and refusing to establish any direct communication between the passengers and the engineer, even at the expense of numberless horrible accidents and outrages, which such a simple change would obviate without any possible harm, except to prejudiced notions. In the matter of street railways, however, it is more than possible that by the time they become well introduced into English cities, a better thing will find its way into American streets. The experience at the East, as well as in this city, is fast raising serious objections to the employment of such conveyance for city traffic. The rail is found a most intolerable nuisance to carriage travel, and rendered doubly worse than it need be by the persistence of street railway companies generally refusing to keep their portion of the street in order, according to the terms of their charters. They are, moreover, quite too apt to think their improvements are of so much value to the public, that there is no need of any special accommodation from either the companies or their employes. Hence, constant irritation and ill feeling is kept up, which, if continued, will eventually destroy the value of such property by the introduction of a different mode of conveyance. There is no difficulty in the way of such a result. A continuous Nicholson pavement, and low-wheeled, easy-riding carriages, would readily supplant street railroads in this city, or any where else, when the experiment should be fairly tried. Our English friends might do well to make a note of this.

PETROLEUM FUEL.—We read very favorable accounts of the improvement lately made by Mr. C. J. Richardson in connection with this subject, which seems chiefly to consist in the introduction of steam among the ignited fluids, by means of which it is stated the heavier oils may be burned, and these, burning, caused to yield a much larger equivalent of heat than can be obtained from the more volatile products. The convenience of a liquid fuel, in many respects, is very manifest, and if it can be brought within the requisite economic limits, its applications would be numerous and important.

THE VENTILATION OF MILLSTONES.—A very important case has been lately decided in the English patent courts with regard to the above subject, the verdict being against the claimant or patentee, and securing to the public right to use the process, which seems to be of great value, enabling more than three times the quantity to be ground, which could be otherwise worked in the same time. The process consists simply of an application of fans, to induce currents of air through the stones in company with the grain and flour, and of porous material to separate the flour from the escaping air.

TO COPY MANUSCRIPTS.—The following method for obtaining copies of manuscript papers will be of great service to those who wish to preserve copies of what they write: "Put a little sugar in common writing ink, and with this write on common paper, sized as usual. When a copy is required, take some unsized paper and moisten it lightly with a sponge, then apply the wet paper to the writing, and pass lightly over the unsized paper a moderately heated iron, and the copy is immediately reproduced."

MORE CO-OPERATION.—Another mammoth scheme of co-operative labor has been announced among the iron workers at Darlington, England. Extensive rolling mills are to be erected. This is better than "strikes."



**LEAKS.**—The Gold Hill News of March 11th has the following: A few days ago, Mr. Pierce, a new superintendent of the Union mill, in Gold Hill, had occasion to dig into the earth under the mill to construct a subterranean drain, and on examination of the soil, he found it filled with crude amalgam and quicksilver. Workmen are now engaged in digging up the earth underneath and putting the whole through an amalgamating mill process. The probability is, that enough money will be realized from this source to pay off some of the debts hanging over the property.

**THE AIR TREATMENT FOR WOUNDS.**—M. Boisson has introduced a method of treating superficial wounds by a jet of air from the common bellows, immediately forming a dried film over the exposed flesh, beneath which healing is greatly facilitated and other advantages secured. Burns which have removed the skin may be treated advantageously in this way.

**Perry Davis' Vegetable Pain Killer.**

The Great Family Medicine of the Age! Pain Killer, taken internally, should be indicated with milk and water, and sweetened with sugar if desired, or made into a syrup with molasses. For a Cough, a few drops on sugar eaten will be more effective than anything else. For Sore Throat, gargle the throat with a mixture of Pain Killer and water, and relief is immediate and the cure positive.

It should not be forgotten that the Pain Killer is equally as good to take internally, as to use externally. Each bottle is wrapped with full directions for its use.

Please read the printed directions.  
Sold by all Medicine Dealers everywhere. 9v14-1m

**Allen's Lung Balsam**

Is warranted to break up the most troublesome Cough in an incredibly short time. There is no remedy that can show more evidence of its merits, than this Balsam, for curing Consumption, Coughs, Colds, Asthma, Croup, etc.

To Physicians—Physicians having consumptive patients and having failed to cure them by their own prescriptions if they desire to try Allen's Lung Balsam, by writing to the proprietors they will send a formula which will enable them to judge whether the ingredients are of a superior quality or not. The medicinal properties are extracted by a chemical process. The apparatus by which some of them are extracted cost many thousand dollars.

Dr. H. F. Mearns, Resident, Office No. 137 West Sixth Street, Cincinnati, states as follows: "About one year ago I took a cold which settled on my lungs. A violent cough was the consequence, which increased with severity. I expectorated large quantities of phlegm and mucus. During the last winter I became so much reduced that I was confined to my bed. The disease was attended with cold chills and night sweats, a diarrhoea set in. My friends thought I was in the last stages of consumption, and could not possibly get well. I was recommended to try ALLEN'S LUNG BALSAM. The formula was shown to me, which induced me to give it a trial, and I will only add that my cough is entirely cured, and I am now able to attend to my business as usual."  
P. MERRITT.  
Sold by all Medicine Dealers everywhere. 9v14-1m

**MELLVILLE C. KEITH, M. D.**

Homeopathic Physician,

No. 25 Montgomery st., opposite the Lick House, (Room 12, SAN FRANCISCO).  
Devotes special attention to CANCER, PARALYSIS and CHRONIC DISEASES. Consultation free.  
18v13-6mnr

**JACOB SHEW,**

Pioneer Photographer,

612 Clay street, north side, four doors above Montgomery. (Late 315 Montgomery street.)  
Takes all kinds of Photographs in the best style of the Art. He would invite special attention to the new "Cabinet Photographs," which he is taking to perfection.  
18v14-7

**WOODWARD'S GARDENS!**

**MUSEUM,**

Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

Open Every Day!

**ADMISSION:**

To all parts of the Gardens.....25 Cents,  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

**California Steam Navigation COMPANY.**

Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPELIS.....CAPT. A. FOSTER  
" ROSEBUD.....CAPT. W. BROMLEY  
" CORVELLA.....CAPT. E. CONKLEY  
" JULIA.....CAPT. E. CONKLEY  
One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.  
Steamships AJAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.  
Office of the Company, northeast corner of Front and Jackson streets.  
13v12

**B. M. HARTSHORNE,**  
President.

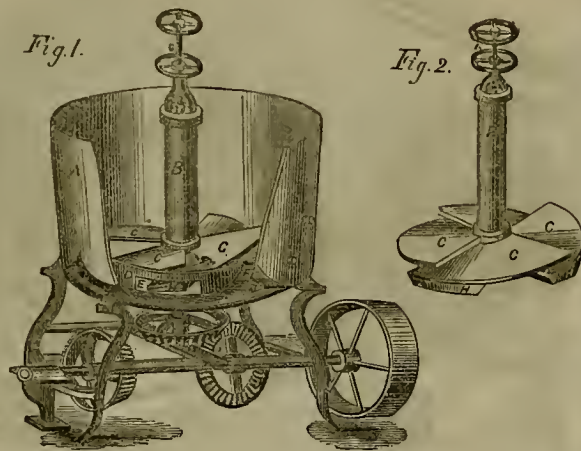
**Just Published.**

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF THE NERVOUS SYSTEM AND REPRODUCTIVE ORGANS, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13 1y

**Gaston's Screw Grinder and Amalgamator**

—IS—  
**The Best Yet Invented.**

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is effectually rubbed by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry.



For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

**Portable Steam Engines!**

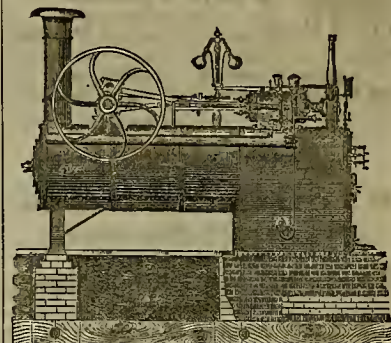
"Hoadley's" and "Hittinger's" Make,



**HOADLEY'S.**

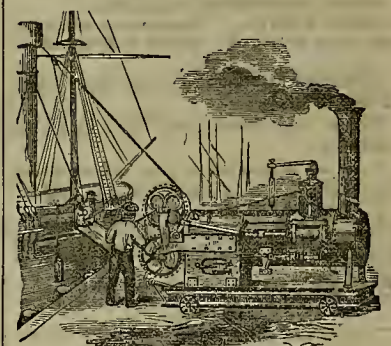
**FOUR SIZES,**

8, 10, 12, and 15-Horse Power,



**HOADLEY'S.**

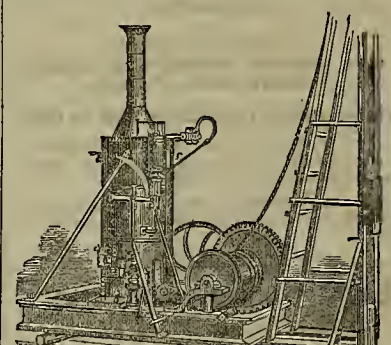
3 to 40-Horse Power.



**HITTINGER'S.**

**THREE SIZES,**

5, 7, and 10-Horse Power



**HITTINGER'S.**

**TWO SIZES,**

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.

Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the miner's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

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San Francisco March 6, 1865. 11v10-1f

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TO CORRESPONDENTS.—Communications have been received from A. J. Howk on the "Occurrence of Tungstate of Manganese in Nye county, Nevada," from "A. C. D., of Grass Valley, presenting a new philosophical problem; from Albert Arents on "The New Mineral, *Partite*," from Dr. Lamsweert on the treatment of auriferous sulphurets in the wet way, by the use of soda, and from J. Mosheimer on "Some Singular Facts with regard to the corrosion of Steam Boilers"—all of which will receive attention in due time.

**RAILROAD TRACK LAYING MACHINE.**—Mr. Robertson, the inventor of this important machine, by the assistance of some of our most worthy capitalists, has constructed a full sized track layer, sixty feet in length, which will be tried before the public to-day, near the San José railroad depot. It has every appearance of ultimate success.

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Never fail to stand any climate.  
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They lead in all valuable improvements—all others follow.  
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POWDER MILLS, PAPER MILLS,  
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—AND—

Machinery and Castings of all kinds, either of Iron or Brass.  
Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.  
Russia Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable, of any Engine in use.  
W. H. HOWLAND, E. T. KING,  
H. B. ANGELL, CYRUS PALMER.  
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Particular attention paid to Analyses of all kinds, in cases where legal questions are involved.

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Principal of the City College.  
Or, PROFESSOR THOMAS PRICE,  
6v12eow1f At 415 Montgomery street, San Francisco.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

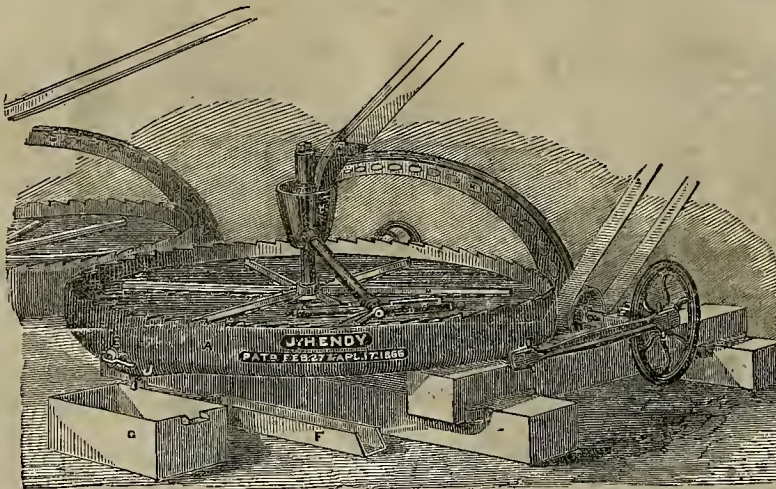


FIG. 1.

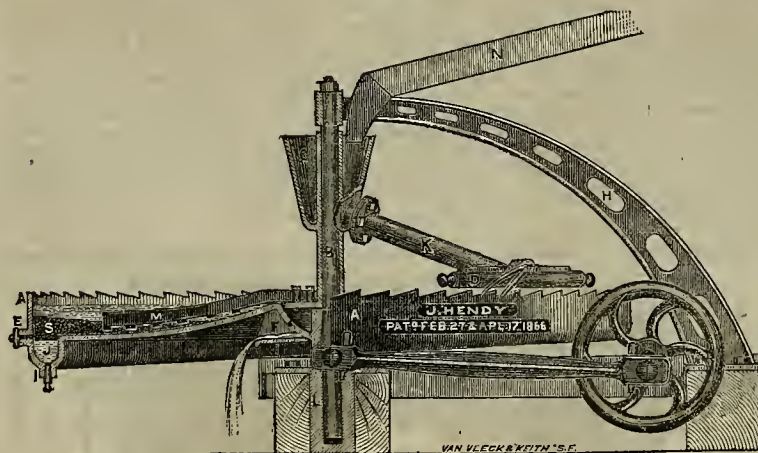


FIG. 2.

### FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

#### Directions for Operating Hendy's Concentrators:

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
FIRST—Set the Pan, A, level, by its inner rim.  
SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

#### References:

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:  
EMPIRE MILL.....Grass Valley, Nevada County.  
GOLD HILL MILL.....Grass Valley, Nevada County.  
CONEY & BIGELOW MILL.....Jackson, Amador County.  
SPRING HILL MILL.....Amador, Amador County.  
GOLDEN GATE MILL.....Volcano, Amador County.  
OPHIR MILL.....Placer County.  
C. H. SCHNABLE'S MILL.....Doty Flat, Placer County.  
GOLDEN RULE MILL.....Stewart Flat, Placer County.  
BENTON MILL.....Bear Valley, Mariposa County.  
LOUISIANA MILL.....Coulterville, Mariposa County.  
RAWHIDE RANCH MILL.....Jamestown, Tuolumne County.  
PEOPLE'S MILL.....Allegany, Sierra County.  
TYRON & CO'S MILL.....Prescott, Arizona.  
WOOLSEY & CO'S MILL.....Prescott, Arizona.  
NOYES & CO'S MILL.....Prescott, Arizona.  
GUADALUPE & SACRAMENTO G. & S. M. CO.....Sinaloa, Mexico.  
TRIUNFO G. & S. M. CO.....Lower California.

And in use in many other parts of this coast.

For description, etc., see files of the MINING AND SCIENTIFIC PRESS.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

#### Remarks:

Many Concentrators have been gotten up in this city. Some of these claim foreign origin; others are of home production. The sonorous Greek names, with which some of these have been dignified, ought, it would seem, to have entitled them to a better fate than that which has befallen them. A large proportion of these machines are now "numbered among the things that were." A few were still-born; never having had an existence except in the shape of advertisements and cuts, prematurely prepared by their too confident projectors. For one of these it was claimed, with a grand flourish of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order or in the way." Unfortunately, however, although it had a reasonable supply of legs, it obstinately refused to run. Amputation failed to remedy the defect, and it now lies forgotten among a heap of old iron,—a mechanical abortion.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works, for 1866, pages 51, 53.

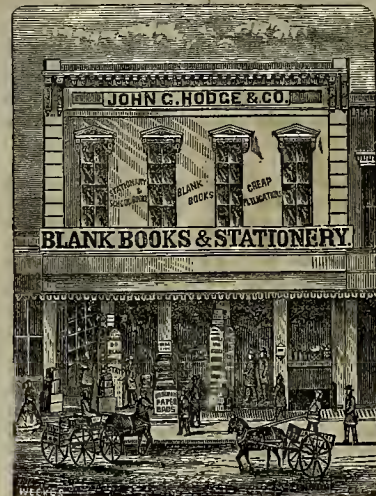
#### CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.  
March, 1867.



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TAVERN AND HAND BELLS AND GONGS,  
FIRE ENGINES, FORCE AND LIFT PUMPS,  
Steam, Liqueur, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,  
**HYDRAULIC PIPES AND NOZZLES**  
For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."  
Highest Market price paid for OLD BELLS, COPPER AND BRASS.  
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And to impart a thorough

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It is conducted upon actual business principles. The student, upon entering the College is furnished with a

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Rents a place of business, opens an account with the bank, insures his goods with the insurance office of the College, and enters upon the area of business. He

**Commences Speculation,**  
Carrying out all the details of trade—buying and selling goods, depositing in and checking from the bank, making and negotiating notes, drafts, bills of exchange, etc., recording the transactions and keeping the books in a regular and scientific manner. From this he advances to other capacities, until he finally takes his position in the

**Union Business College Bank,**  
A regularly established institution, complete in all its appointments, and having a circulation of

**One Million in College Currency.**  
This course saves from four to six weeks' time in copying useless manuscripts.

**Pennmanship.**  
PROF. F. SEREGNI, our instructor in Pennmanship, is well known to be a thorough and systematic teacher. And no College at present on this coast advertising to teach Pennmanship, has ever taught the same by a regular, systematic plan, and we unhesitatingly declare, that for practical and systematic instruction in this branch, we challenge competition.

**Telegraphing.**  
The large and increasing demand for good Telegraph Operators has induced us to organize a separate department or thorough instructions in this branch, and we are now enabled to present advantages in this line equal to any that can be afforded on the continent. Several instruments are in operation, and others will be added as occasion requires. So great is the demand for operators, that no young man, well qualified, need be wanting a situation. A skillful and accomplished operator has charge of the departments, and will devote his special attention to the advancement of the students under his charge.

There is no vacation, and students can enter upon any business day during the year. The public are invited to call and examine the various departments. Sessions day and evening.  
For Circulars and further information, address  
JAMES VINSONBAUER, President.  
10v14-1m



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DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, APRIL 6, 1867.

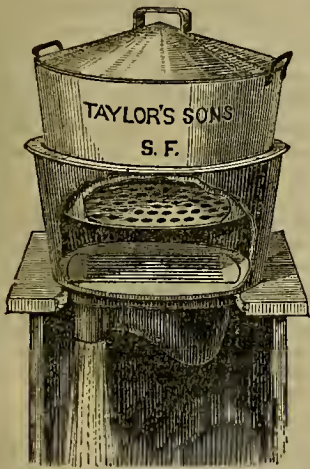
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### An Improved Cesspool Cover.

We give annexed a representation of a very important and useful device, invented by Mr. Taylor, of the firm of Taylor's Sons, 429 Pacific street, the object of which is to prevent the escape of gas from sewers, cesspools, etc., which is often a source of very great annoyance, and not unfrequently the producing cause of fatal disease. The principle of the device will be readily understood on reference to the illustration. The upper portion is termed a "garbage box,"

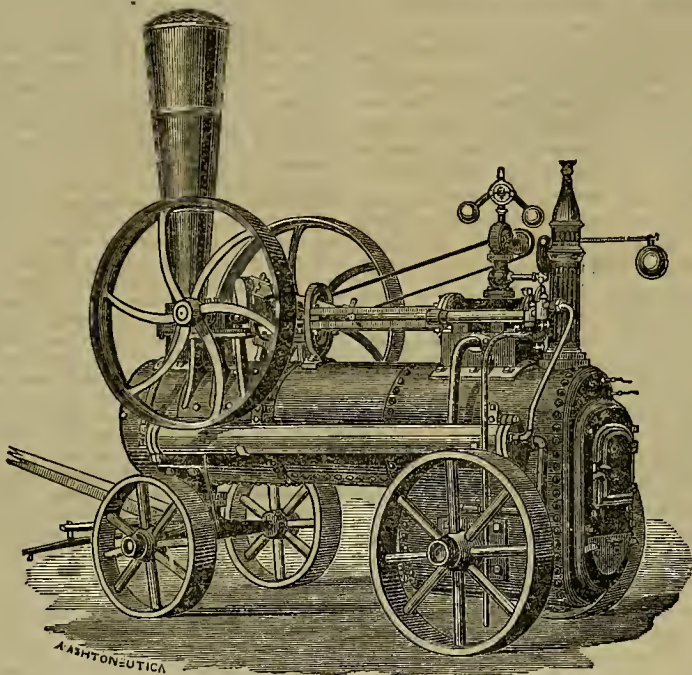


and is constructed like an ordinary "steamer" for culinary purposes. Its use is to drain off the useless liquid when it is desired to save the garbage from the kitchen, for swine. This can be removed at pleasure, and the "slops" from the house, when poured into the iron pan beneath the garbage box, pass down into a globular projection below the cesspool cover, across the interior of which is a partition reaching to near the bottom, under which everything must pass on the way to its exit from the discharge orifice, seen on the left. This globular projection being kept constantly filled with water, from the hydrant or otherwise, the entrance to the cesspool must be constantly and effectually sealed, so that no gas can escape from it to the outer air.

The device is a most important one, in view of the preservation of health in crowded communities, and should be universally introduced.

### Hooker's Patent Pump Valve.

A patent for this improved pump-valve was recently obtained for the inventor, Mr. W. D. Hooker, through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.



WOOD & MANN'S PORTABLE STEAM ENGINE.

The valve may be made of iron or other metal. A, A, A, are the guides which work in the corners of the valve chamber, and secure the valve from turning. B is the body of the valve. F shows the edge of the india rubber facing, which is secured to the bottom of the valve by a washer and screw, the end of which is seen at C.

Fig. 1.



Fig. 2.

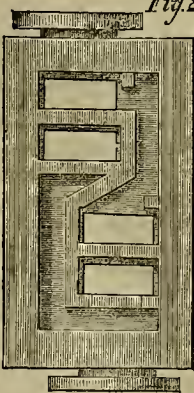


Fig. 2 represents the valve-seats and chamber in which the valves operate. The advantages claimed for this valve are:

1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than the common

pump valve. 4. With this valve a pump may run at a high rate of speed, and insure a large supply of water.

The efficiency of this valve has been well tested by its use in the Excelsior Pump, invented by Mr. Hooker, and before noticed by us. These pumps are manufactured of various sizes, by Messrs. H. J. Booth & Co., at the Union Iron Works, in this city. Some of our most practical mining engineers have adopted them into use, and so far as we learn, they have given satisfaction. Mr. Hooker is a California inventor of no ordinary genius, and we are pleased to note that his pump has been steadily growing in favor.

We are informed that patent rights, for the use and manufacture of this valve, can be purchased by applying to Capt. V. Cushing, No. 120 Front street, San Francisco.

PERSONAL.—Mr. Charles Liebenau, mining engineer and metallurgist, a Freiberg graduate, and one who has spent a considerable time in examining the mines and metallurgical works in Saxony, and other parts of Europe, has called upon us. He is about to leave for Oro, Flint District, Owyhee county, Idaho; whither he goes with the intention of practicing his profession. He comes highly recommended, and refers, by permission, to several gentlemen in this city, as well as in New York.

ENSLEY'S GAS.—A trial of this new patent illuminating material was made last night at the Pacific Woolen Mills. It proved a complete success.

### Portable Steam Engines.

The steam boiler and engine in a portable form, long ago became an object of special interest as a motive power in certain departments of industry in England; but due credit is to be awarded to the American intellect—ever quick to take advantage of every new step in the way of progress—to greatly enlarge the boundaries of its application by simplifying, cheapening and otherwise improving upon its manufacture.

We give herewith an illustrated description of a medium-sized engine, with boiler, as a representative of this class of machines, manufactured at the works of Wood & Mann, Utica, N. Y., who, from having for the past fifteen years made a specialty of this particular class of engines, have done much towards its introduction into general use, and adding to its popularity as a motive power, taken in connection with the fact that it possesses in a great variety of cases advantages far superior to those of the stationary kind. Saying nothing, as to very obvious advantages to the farmer for driving his threshing and separator, to the architect for raising the material for his building, to the pile-driver and others, and with a mere allusion to its almost universal adaptability as a motive power for wood-sawing, pumping, reaping, threshing, for planing and shingle mills, portable sawmills, and for various other purposes which will readily occur to the mind; we would call the attention of our readers to those points of advantage it possesses for facilitating some departments of labor associated with our mining operations, where the stationary engine would be far more expensive and cumbersome—often wholly unfit for the demand of the hour.

It is, for instance, just the kind of power needed by the river and hydraulic miner, for hoisting or pumping, being readily transferred from point to point as occasion or necessity requires.

To the quartz operator, it evidently possesses advantages in certain instances, which cannot be claimed for the stationary engine, generally in use, requiring no machinist at high wages to superintend its erection, to put it in operation, and to make the necessary and often expensive alterations, so frequently causing vexatious delays, if not financial ruin; but is always in order and ready to be fired up, on arriving at its place of destination, to work at mill, shaft or pump, wherever and whenever its services are called into requisition.

To quartz prospectors it must be invaluable, varying as it does in capacity from a 4-horse power, easy of transportation and adapted to the lightest class of machinery, to one sufficient for all the purposes of a 20-stamp mill.

In this connection, we would suggest the hope that the day may not be distant when California ingenuity will find some mode of turning the late improved portable fire engine to good account in washing down our immense banks of auriferous gravel deposits. It is quite possible that the causes



of failure in any attempts hitherto made in this direction, are not beyond the reach of genius, enterprise and capital.

The machine here illustrated is well described in the *Country Gentleman*, as follows:

"It will be observed from the engraving, that the working machinery is placed *above*, instead of at the side of the boiler, as was the case in the engines formerly made by Mr. Wood. He is convinced that this is a decided improvement. The boiler includes perfect circulation of water around the furnace; an arrangement preventing water or "foam" from getting into the steam pipe; stands for the principal journals so made as to prevent their ever heating; two fly wheels instead of one, thus avoiding a one-sided strain, and furnishing power for two machines, if desired, at the same time in different directions; a governor, perfectly controlling the speed; a heater, by means of which the water enters the boiler hot, saving much fuel, as the heating is done by the exhaust steam which has already performed its work, and afterwards does still more by passing into the smoke-pipe, killing sparks and creating draft; good facility for cleaning the boiler tubes; and lastly, such an arrangement of the furnace that no sparks can escape from it or from the ash-pit.

All the work is made from drawings, and every part is carefully modeled according to a fixed scale, and can at once be replaced should it be broken or lost, one part being a duplicate of the other."

These engines may be seen at the establishments of Messrs. Baker & Hamilton, both in this city and Sacramento.

**IRON WORK FOR THE STATE CAPITOL.** We had the pleasure, a few days ago, of seeing at the Miners' Foundry some of the various drawings and designs for the iron work intended for the State Capitol, all of which appears to be in good taste; while some of them—more particularly the ornamental—may be said to be really beautiful, doing much credit to Mr. Cummings, the architect, who executed them. Among the latter, as deserving special attention, is the coat-of-arms for the State, to be executed *in relief*, one of which is to be placed over the doors of the principal halls and of the library. The contract, which was awarded to the Miners' Foundry of this city, will require nearly 1,000 tons of iron, at a cost, including labor and transportation, of about \$100,000. Among the heavier articles, we noticed no less than twenty massive columns, weighing each eight tons, or 160 tons in the aggregate.

This foundry has also recently received an order for machinery from a New York company—the Combination Silver Mining Company—who have a location of 5,000 feet in the celebrated High Bridge ledge, Philadelphia district, in the State of Nevada. They have ordered a 40-stamp mill, together with all the necessary fixtures and machinery for the same, with the intention of adding forty stamps more before the winter sets in. We have learned from sources wholly reliable, that this company have not only rich rock—working by mill process from \$200 to \$500 per ton—but apparently a great abundance of it; the ledge being said to crop out for 5,000 feet, with a width of from ten to thirty feet.

**SOUTH BEACH IRON WORKS.**—Messrs. Newsham & Bigwood—long known here as practical mechanics—have recently set in operation, on King street, near Third, an enterprise for the purpose (as may be seen in their card) of forging all sizes of high and low pressure marine engines, every imaginable description of iron work for mills or houses, and also everything pertaining to a general ship-smithing business. They can ask no better guaranty of success than the reputation which they bring with them to this new enterprise by means of the skill which they are said to have exhibited here in some of the largest and most difficult manipulations in this department of mechanics.

**THE LAST REBEL.**—Tho Memphis *Avalanche* claims that Gen. B. C. Hill, of Warren county, Tennessee, was the last Rebel officer who surrendered himself and forces, and who fought the last battle of the war. He was paroled at Chattanooga on the 17th of May, 1865.

## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

### The Reduction and Concentration of Auriferous Ores.

BY DR. L. LANSZWEERT.

[Continued from Page 194.]

This is a table from ten to fourteen feet long, and from four to six feet wide; slung by means of four chains leading back, and with its head resting against a block of timber. It is pushed forward by means of a lever, and when released swings back against the block with a smart blow; making from twenty to fifty blows per minute. The sand and water is run on to the head of the table and flows down it, carrying off the lighter material, the heavier being retained on the table, and gradually brought up to the head by the force of the percussion blow. In dressing ordinary ores, a table of the size mentioned will put off from one to one ton and a half in twelve hours, and the material retained on it still mixed with such a proportion of the poor waste, as to require a second and sometimes a third dressing. These known defects evidently rendered the percussion table inappropriate to the concentration of sulphides in Australia, where material and labor are so costly, however useful it may be under more favorable conditions in this respect. The object in trying this table was, therefore, to see if its defects could not be remedied, or the percussion principle applied to more advantage. Careful observation of the working of a small percussion table soon led to the conclusion that the cause of its imperfect action was the *heavy bank formed upon it by the sand* which prevented the blow from producing its full effect on the heavier particles; and it was evident that the action would be much improved if the sand on the table could be kept loose, in a semi-fluid state, so as to allow the blow to produce a maximum effect.

When finely ground ore is suspended in disturbed water, a blow given to the side of the vessel containing the mixture will check the current, and tend to settle the materials in suspension in the order of their specific gravity—the heavier particles falling first; and even where gold or any of the sulphides are in such a fine state of division as to float on the surface of the water, a similar blow will at once cause them to sink, and at the same time draw them towards the point where the blow is applied. This is the action of the percussion table; and when the sand on the tables is kept loose, the pyrites, however finely crushed, are thrown down by the sudden check given to the current of water by the percussion blow, and drawn below the surface of the sand on the table, where it is protected from the action of the water, and gradually accumulates towards the head, the point where the blow is given. To apply this principle with success, several details require to be attended to. If the sand is allowed to form a hard bank on the bed of the table, the pyrites cannot settle into it readily; and if the sand is kept too loose, the motion of the table forms a wave, which tends to throw the pyrites to the surface and again exposes them to the risk of being carried off by the current of water.

Numerous experiments were made to ascertain the form of stirrer best calculated to meet these requirements. That finally adopted is not unlike the prong of a sluice fork, and is made of quarter-inch railroad iron. They are set about an inch and a half apart, in rows, each row being fixed into an axle working on gudgeons nine inches above the bottom of the table, on which the curved ends of the stirrers always rest, the axles allowing each row of stirrers to rise or fall with the table. The bed of the table is covered with light boiler plate to reduce the wear, as grooves are soon formed in a wooden

bottom over a disturbing board, which delivers them in an even sheet over the sloping head, clear of the sand in the table. The suspending chains have regulating screws on each, for the purpose of adjusting the levels.

The upper chains are fixed, but the lower ones pass over and are attached to a roller, by means of which the inclination of the table can be altered at pleasure, without disturbing the cross levels. When put to work, the table is set with a slight inclination to the head, and is gradually lowered whenever the sand at the head collects to over two inches and a half in depth. The tailings should then be diverted to a spare machine, and clear water only allowed to run over the table. After working a longer or a shorter time, according as the sand operated on may be poor in sulphides or the contrary, the table will become loaded with pyrites. For a few minutes the bulk of the pyrites will have collected at the head, when the table must be stopped, the pyrites shoveled out, and then the work resumed as before.

Hitherto the machine has only been worked at the Good Hope mine, the table used there being a small one, two feet nine inches wide, with a bed seven feet long. Through this was passed the waste tailings from heads of stamps—*thirty-five to forty tons per week*—and carefully sampled, at short intervals, before going into the table and after leaving it, the samples being all filtered through close-woven calico. The assay of these samples, made at the office of the Port Phillip Company, gave the following results: Gold contents of waste tailings before going on to the table, 17 dwts. 22 grs. per ton; after leaving the table, 3 dwts. 4 grs. per ton; amount of gold retained in sand on table, 14 dwts. 18 grs. per ton—equal to 82.3 per cent. of total gold contents. The gold-bearing material saved on the table consisted principally of decomposed pyrites converted into oxide of iron. It is probable that each of these particles of oxide contains a nucleus of undecomposed sulphide; yet, the partial oxidation is sufficient separation from the quartz sand, and the saving of such a large proportion of this material is equivalent to a saving of from ninety to ninety-five per cent. of the undecomposed sulphides. Three of these tables are now in course of erection at the Good Hope mine, and one at Chunes, where it is being worked on different kinds of material with great success. Hitherto the close concentration of the sulphide in the waste tailings could not be effected without such an increase in the loss as more than balanced the gain through having to treat a smaller quantity of pyritous sand. With the table a much higher degree of concentration can be effected, without the risk, than by any other means previously discovered, and there will be a corresponding decrease in the cost per ounce extracted. No doubt experience will lead to improvements in the working and construction of this table, but even in its present form it surmounts the difficulty which has so long stopped the way; it is simple, inexpensive, and easily erected; and when worked in conjunction with the system now in use at Chunes for extracting the gold, will obtain from seventy to seventy-five per cent. of the gold at present lost in the waste tailings, at a cost not likely to exceed 10s. per ounce.

### Central Nevada.

**EDITORS PRESS:**—The southeastern portion of the State of Nevada is certain to attract great attention during the coming summer. It presents a fine field for capitalists, merchants, prospectors and miners. A few facts will show that it is indeed the poor man's country.

SILVER BEND is the term now generally applied to the southeastern of what has hitherto been called the Reese River country, and includes Philadelphia, Hot Creek and Reveille districts. The celebrated mines of the Philadelphia district were discovered in October, 1865; but their great value became known only in May following. The Highbridge mine, located by a "broke" prospector, was sold by him for \$10,000. It may now be sold at any time for a quarter of a million dollars! A person in whose name 200 feet on the Transylvania ledge was located, that he might deed back to another party, gave the ground away for \$100. By the \$100 purchaser it was sold for \$11,000; and recently Col. Buel sold it for \$70,000. These are a few specimens of the chances possessed by the poor man in the Silver Bend country. J. D. E.

[Written for the Mining and Scientific Press.]

### The Occurrence of Tungstate of Manganese in Nye Co., Nev.

WESTON, Mammoth District, }  
March 17, 1867. }

**EDITORS PRESS:**—In your issue of the 2d ult., you refer to the mineral, tungstate of manganese. You are correct in surmising that the specimen submitted by you to Prof. Blake, and the mineral referred to in Siliman's *Journal of Science* (copied from the Reese River Review) are from the same locality; as they were both from the Enterprise mine in this district. The other mine mentioned (the Erie) also produces it in small quantities. These lodes are large and well defined veins of quartz, and are among the most noted of our silver lodes. In the former the mineral occurs in a compact streak, about two inches in width, occupying the outer edge of the quartz next to the "foot wall;" the other part of the lode carrying silver with the line of division well marked. At the surface there was no indication of this mineral; the entire width of quartz being rich in the various combinations of silver; chlorid of silver, and brittle ore of silver predominating. At the depth of twelve feet, it made its appearance as described above, and extended down for forty feet, where it "gives out" as abruptly as it "comes in," giving place to sulphuret of silver.

Without denying to Mr. Hubner (whose name the new mineral bears) the credit of its discovery, or rather its properties, I will mention a much earlier notice of it.

Dr. A. Blatchley, then residing at Austin, and being in Mammoth early in the spring of 1865, I called his attention to this strange looking mineral, and he pronounced it to be tungstate of manganese—entirely new to the scientific world. This, I am of opinion, was previous to Messrs. Riote and Hubner's analysis.

Prof. Adelberg goes wide of the mark, when he says it occurs in metamorphic clay slate; for the only lodes in Central Nevada known to produce it, are in this district (and are undoubtedly the same referred to by Prof. A.) They traverse a wide belt of coarse feldspathic granite; associated with the lode is porphyry and fluor spar, the latter beautifully crystallized, and with the former occur the most perfect and remarkable twin and other formed crystals of feldspar. Very respectfully,

A. J. HOWE.

**WILCOX & GIBBS' IMPROVED NOISELESS SEWING MACHINE.**—This machine, concerning which but little noise has been made, at least on this coast, is a neat, compact, and apparently durable little instrument, simple in mechanism, easily worked, and not liable to get out of order. It can be seen daily at the rooms of Mr. Samuel Swift, agent, 203 Kearny street, nimbly plying away at its task for hours at a time, without dropping a stitch or breaking a thread. If its seam is stronger, more elastic, and less likely to rip in use or wear than the lock-stitch, or if it possess half the merits claimed, it is destined, in spite of the host of excellent competitors already in the field, to work its way here as in the East to a full share of public favor, as rapidly and effectually as it now appears to perform its work.

**THE ERIE CANAL.**—Gov. Fenton recommends the enlargement of the locks of the Erie canal so as to permit steam vessels to pass of 600 tons burden. He does not favor the construction of a ship canal around Niagara Falls, lest it carry commerce from the State by the St. Lawrence.

**EXTRAORDINARY DISCOVERIES.**—Mons. Lejean, who has been sent by the French Government on a journey of scientific exploration to the Persian Gulf, reports having discovered ante-Sanscrit languages, spoken by the mountain tribes between Kashmir and Afghanistan. He has also found two ruined cities of the Persepolitan period.

**SAILING OF THE "COLORADO."**—This fine steamer sailed at noon, on the 3d inst., on her second trip to Yokohama and Hongkong. She carried as passengers, twenty-two in the cabin, and two hundred and fifty-four Chinese in the steerage; and some 1,200 tons of freight.



## Mechanical.

## Cast Iron vs. Wrought Iron.

The value of cast iron over wrought iron, so far as the relative power of the two to resist corrosion is concerned, has long been acknowledged; but is not often duly considered. The purer the iron, the more readily does it corrode. Cast iron is a carbonate of iron—a very impure iron; and in proportion to the amount of carbon it contains, so is it enabled to resist corrosion. Wrought iron water pipes under ground, soon rusts out; while cast iron of the same thickness, remains good after many years use—in fact are considered practically to suffer no deterioration. Wrought iron in boilers decays internally, the most rapidly where moisture and air operate alternately, as in the upper side of mud drums, while they are often, also, eaten through from the outside, by trifling leaks and the constant trickle of water over the surface. A large proportion of boiler explosions are due to corrosion induced in this manner. The British Association for preventing boiler explosions, in their report for 1863, say that no less than forty-seven explosions, attended with a loss of seventy-six lives, were due to that cause of corrosion alone.

One of the great advantages of the Harrison boiler is claimed to be its construction of cast instead of wrought iron. Cast iron was the first material used for steam boilers, and there is much in the present signs of the times to augur a return to first principles in that respect. In proportion to its tensile strength, cast iron is much safer than wrought iron. In a leading article in the *Engineer*, for 1864, it is said:

"It has been so long the custom to consider cast iron as a brittle material, hardly to be trusted under pressure, that it requires some amount of reflection to perceive where in it possesses manifest advantages over wrought iron. The resisting strength of a properly made cast iron boiler is calculable, and a good *a priori* case could have been made out in its favor, long ago.

May not the very brittleness of cast iron, when used in a steam boiler, prove an element of safety? It is a well known fact, as stated by a writer in the *American Artisan*, for Nov. 22d, 1865, that cast iron is *not* liable to be strained by inequality of temperature, it is liable to *break* from such cause, and will give out at once if badly proportioned or improperly used. Wrought iron in steam boilers is liable to be strained by inequality of temperature, and not fracturing at once, goes on straining until its structure is destroyed, and the parts thus strained inevitably give way, death and destruction too often following. Put cast iron in such form as will prevent harm in case of rupture, and it becomes the *very best* material for steam boilers, and one of its best qualities is in giving out when badly treated, a warning not to treat so again. Not so wrought iron; its very tenacity begetting a false security which might lead to disaster at any moment."

It certainly appears strange at a first glance, that such a seeming bad quality as brittleness in any material, should make it more reliable than a more tenacious one, for purposes needing strength. It would appear more strange, if this should prove true, in a material for steam boilers; yet present indications are such as to look very decidedly in that direction.

**DURABILITY OF THE STEAM ENGINE.**—The maintenance of a well made steam engine when entrusted to competent and careful hands, is a thing of but slight import, and such an engine will last for a generation. In fact, it is said that there are engines now doing good service in England, which were built by Watt and his contemporaries. But where are the boilers that started with those engines? Gone, and many succeeding the first, gone also. Well it is, if no human life has been sacrificed in their sudden "going."

**THE LARGEST ANCHOR** in the world has been completed for the Great Eastern, at Wolverhampton, England. Its weight is eight tons, exclusive of the stock; length of the shank, twenty feet six inches; length of the wood stock, nineteen feet six inches; tread of arms, seven feet four inches. The anchor has been proved, and found to stand the strain of one hundred tons.

## Punching Heavy Cannon.

Great improvements have recently been made in machines for punching. It is but a short time since the mechanical world was astonished at the remarkable feat of punching out railroad locomotive wheels, so as to avoid the necessity of welding, which was always uncertain. But we are now told that an English firm has perfected a machine with which they are punching guns of 10½ inch caliber, down through a steel ingot *four feet high*, and weighing three tons! The *modus operandi* of this wonderful achievement, is described as follows by an English correspondent of the *Scientific American*:

The punching is done with a fine pointed punch, in the first place; the hole being started at both ends of the block, and the punch driven in till the two holes nearly meet in the center. Blunt punches of a larger diameter are then driven in to expand the hole, and the diaphragm separating the two holes is forced out. This operation at once reveals any defect in the metal by the severe strain put upon the grain, and so enables a defective block to be rejected before any further labor has been wasted upon it. The hollow cylinders thus formed are beated and a mandrel inserted in the hole, and they are then drawn out under a hammer into tubes, the presence of the mandrel making the thickness of metal acted upon very small compared with a solid forging of the same size, thereby securing a more thorough working. The tubes are again heated and a mandrel having a long stem of somewhat less diameter is introduced into the bore. The tube is then passed through grooved rolls, the mandrel being held stationary by a collar on its stem secured in a frame in front of the rolls, in such a position that the head of the mandrel shall come directly in the center between the two rolls so as to sustain the pressure. The motion of the rolls draws the tube off the mandrel. Another slightly smaller mandrel is introduced and the operation repeated till the tube is brought down to the diameter required. It will be seen that it is quite possible also in this way to produce tubes with a solid end which are well adapted for guns. For gun barrels there is a set of rolls with recesses cut in the grooves to produce the enlarged section required for the breech. The rolls are made to stop for two seconds at each revolution, so as to allow the tube to be properly inserted, though it has been found quite possible to do this without this precaution. This process is very valuable for making hollow railway axles, which aside from being light must necessarily be sound from the nature of the process. It is intended also to apply it to the manufacture of boiler tubes. The celebrated firm of Messrs. Peter Gaudet & Co. are also preparing to carry on this manufacture in France.

**A MAMMOTH SET OF ROLLS.**—Knapp, the famous German founder in Essen, is now engaged in the construction of a mammoth set of rolls, with the view to the rolling of iron plates of such a size as to admit of the making of steam boilers from a *single plate*, by the addition, merely, of the end pieces. These rolls will be *twenty-seven feet long and five in diameter*, each one weighing over 100 tons! In a recent article on some desirable improvements in the manufacture of steam boilers, we called attention to the necessity of just such a machine, with the added importance, however, of some facility for *welding* the joints of the sheet, instead of securing them with rivets, which inevitably work such a large percentage of decrease in the tensile strength of the iron. The same founder is putting up a new steam hammer which will weigh 240,000 pounds, and will cost over one million of dollars.

**A LARGE PUMP.**—The monster Cornish engine and pump, for the Chicago Water Works, the only one of the kind in the country, has been put up and subjected to a trial. It raises the enormous quantity of one million of gallons of water per hour, which is far beyond the capacity of the reservoirs to retain it, or the city's need. We are not told the height to which this water is raised or the horse power of the engine, one or the other of which data are needed to form any proper idea of the size and power of this "monster" engine.

Two of the most active poisons, chlorine and sodium, form our common table salt.

## Scientific Miscellany.

## The Rings of Saturn.

The chief interest which attaches to the planet Saturn, is due to the splendid luminous rings which encircle it in the plane of its equator. Late observations have shown that there are at least four, and possibly a still greater number of these rings. The distance of the inner surface of the inner ring from the surface of the planet is only 18,000 miles; while the outer surface of the outer ring is about 86,000 miles distant. The greatest space between the surfaces of any two of the rings is 1,752 miles. The space between the other rings, though less than this, has never been ascertained.

The thickness of the rings has been variously estimated at from 100 to near 1,000 miles; a moon between the two would probably be about the truth. It is so small as to be scarcely appreciable at the distance of Saturn from the earth. An observer standing upon the equator of that planet at the equinoxes, and at the noon of its day, and looking upward, would see a broad, but dimly defined arch extending directly overhead, from the eastern to the western horizon. As the sun gradually descended to the west, the eastern portion of this line would become illuminated, and present the appearance of a long curvilinear arc of light, gradually elongating until the sun passed out of sight, when it would as gradually disappear from the west, and soon after reappear and commence its increase in the east.

An observer in latitude 45 to 60 north or south of the equator, would, at alternate seasons of the year, be able to get quite a glimpse of the flat surfaces or sides of the rings, as the seasons advanced and receded. Possibly his vision might be able to penetrate through the dividing spaces between the rings; in which case he would behold a series of broad arches of light, one over the other, each as broad or broader than an ordinary rainbow appears, on the earth. Such a sight would be, indeed, magnificent beyond all description!

Of what these rings are composed, how they came there, what keeps them in position, what immediate purpose they serve, no man can tell; at least no one has yet answered these questions in any very satisfactory manner. One imaginative philosopher has suggested that they might possibly have originated from some wandering comet, which, in its eccentric motions, has, anacanda-like, wound its huge tail around the planet's disk; if so, the heavenly wanderer most assuredly caught a tartar, and has been glad to get off shorn of its caudal appendage.

It has been pretty definitely proven, however, that the rings are fluid masses, their density being a little greater than water. Prof. Pierce and Mr. Bond have suggested, and pretty clearly demonstrated, that they must be held in *equilibrium* mainly by the action of the satellites of that planet; and that to be sustained, they *must* be fluid. This would seem the more probable, from the fact that the satellites, eight in number, are all *outside* of the rings, and revolving in the same plane with them and the planet's equator. The rings also are supposed to revolve around the planet like a circle around a central disk. If so, their centrifugal forces would materially aid in keeping them in position.

Now, observe what must inevitably follow from this thing. The attraction of these satellites, which have revolutions of different lengths of time, must necessarily act unequally on the fluid material of the rings, producing a series of conflicting tides, in which the force of each satellite will be so opposed to each of the others, as to produce an immense amount of friction among the particles of the fluid mass of the rings. The inevitable tendency of this friction must be to gradually decrease the rotary motion of the rings around the planet, until in the

lapse of ages that motion must be so disturbed as to bring about a disruption of the outermost ring. This will, perhaps, be more immediately caused by the approach of a conjunction of all the satellites, gradually piling up an immense tide upon one side of the ring until the rupture occurs. In such a case, the chief mass, or perhaps the whole of the ring, would assume a spherical form; possibly, a portion at the point of *low tide*, opposite the conjoined planets, might come within the attraction of the most innermost ring and *fall into it*.

When that time arrives, as arrive it undoubtedly will, the announcement will be made from the observatories on this planet that Saturn has one ring less and one moon more! The astronomer of that day may watch with his telescope, and wonder, as he beholds with his eyes, a world in process of formation from a wildly agitated chaotic mass! He may actually see God's work in the formation of a world; for the change from a state of chaos to a beautifully formed sphere may possibly be included within the limits of a day—at least within that of seven days. We may wonder and look upon such an act of omnipotent power with awe and dread; but when we reflect upon the beauty, harmony and simplicity of God's laws, would that which we have foreshadowed be any more of a wonder than the thousand acts of creation which are daily passing before us, where the hand of God is constantly shaping and tinting the flowers of the field with all their beautiful colors and forms! We may not see the aggregation of the particles of matter as they are collected and elaborated, either in the formation of a world or of a flower; but we may yet live to see a beautiful world brought out of chaotic confusion in a day, as we often see a beautiful flower open for the first time its delicately tinted leaves, and the bud become a blossom while we are admiringly beholding it.

**SOURCE OF THE SALT IN THE SEA.**—The carbonic acid of the air is constantly acting upon the rocks on the surface of the earth, thus turning them to clay, and forming carbonates with the soda, potash, lime, and magnesia set free. These are carried down as carbonates to the sea, where the carbonate of soda decomposes the chlorid of calcium of its waters, and forms common salt and carbonate of lime. This series of actions is the source of the salt of the sea, of clays, and of limestones. Organic living things do not generate the carbonate of lime, but appropriate it, when formed for them by chemical reactions; and thus great portions of our limestone rocks are made up of fossil remains. In a volume of limestone there is separated and condensed from the air a large amount of carbonic acid gas; the early atmosphere was, therefore, very dense and unfit for the sustenance of the higher forms of life, until by far the greater portion of this gas had been removed by the formation of the carbonate of lime and vegetable matter now constituting coal and petroleum.

SILVER may be substituted for platinum in a Grove's battery, as appears from some experiments lately announced to the French Academy, provided one-quarter part of hydrochloric acid be added to the nitric. A film of insoluble chlorid in this case protects the plate. The fumes of chlorine, which must undoubtedly be added to those of nitrous acid, would, however, prove, we think, a serious objection to the use of this plan.

**EXPANSION OF RAILROAD TRACKS.**—The accumulated expansion of the rails in a line of railroad 500 miles long, would amount, at the highest summer temperature, to nearly one-fourth of a mile, as compared with the length of the same rails during the coldest weather of winter.

**REGENERATION OF BONE.**—Some French savans have offered a prize of \$4,000 for the best essay on the "regeneration of the bone." They declare that experience and observation seem to indicate that amputation may be almost entirely superseded by the creation of new bone.



STATE AGRICULTURAL COLLEGE.—The site for this institution was, on the 2d inst., determined upon by the State Board of Commissioners appointed for the purpose. It is a tract of land of over 100 acres, contiguous to the grounds of the College of California, three miles north of Oakland. The price paid was \$30,000. We consider the selection a good one. There is no question that an educational institution of any kind, requiring regular courses of lectures from scientific professors should, generally, be located in the immediate neighborhood of the metropolis. It is there that the men of letters "most do congregate," where they can have ready access to the various libraries of reference, and that frequent intercourse with each other in scientific and social converse, which is necessary to preserve their powers in all their brightness. More especially is this true with regard to an institution like this in its infancy. At a distance from the capital, it would assuredly languish. It must be borne in mind that this is a "Mining" as well as "Agricultural" College. The expensive works necessary for the illustration of all branches of the first of these departments, could certainly be located to better advantage in this city than elsewhere; will, in fact, be located here, in any case, without reference to the college, and might as well be taken advantage of. As regards the second department—here will be the depot for newly invented agricultural implements; here will be extensive chemical works, and the means of preparing on a large scale any new fertilizer that progressive chemistry points out to the farmer; and here will be the center of branching railroads which can convey the class of students, with their teacher, in a few hours, to any part of the country which may at the moment offer especial facilities for the illustration of any particular subject.

At the point selected, the soil is reported good, the view magnificent, and the climate agreeable. The background of hills serves to so divert the fog-bearing air-currents which sweep through the Golden Gate, that this favored spot is left intact.

P. S.—The above was in type before the error into which the city journals were led was corrected. The location was for the Deaf, Dumb and Blind Asylum. No site has as yet been selected for the Agricultural College. As an expression of our opinion, however, we allow it to stand.

**NEW INCORPORATIONS.**—April 3d—California Sugar Refinery. Capital Stock, \$300,000; 300 shares, of \$100 each. Trustees: Claus Spreckles, Peter Spreckles. Claus Mangels, Fred. Hagemann and Henry Horstman.

April 4th—South San Francisco Dock Co. To buy, sell, lease and convey real estate at South San Francisco, and to build wharves and other improvements on the water front of the property. Capital Stock, \$500,000 in 500 shares of \$1,000 each. Directors: J. B. Knapp, Joseph De Forest, B. C. Vandal, H. B. Brooks, H. Rosencrans, John S. Hittell, William W. Neal, Thomas Anderson and Samuel Tyler.

SOUTHERN RELIEF MEETING. — A very large and enthusiastic crowd assembled on Thursday evening last at the Academy of Music, for the purpose of making arrangements for the collecting of money for the relief of the Southern people. Speeches were made by several clergymen and others, and a commission was organized to procure a subscription.

G. L. WADLEY, M. D., physician and accoucheur, recently from La Porte, Sierra county, has established his professional office at No. 23 Kearny street, in this city. We have known the doctor as a successful practitioner in his mountain residence for eight years. His Sierra county friends will be pleased to note his address in San Francisco.

“THE NATIONAL PROBLEM SOLVED!”—  
We have received a copy of a pamphlet with  
the above title.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO. SATURDAY MORNING, }  
April 6 1867

## CITY STOCKS.

We note a little more animation in city shares during the past week as compared with our reference of the previous week. California Steam Navigation Company advanced from 67 to 75  $\frac{3}{4}$  cent., and closed yesterday at 70  $\frac{3}{4}$  cent. This marked appreciation is doubtless owing to the rumored consolidation of the various opposition lines with this company. S. F. Gas stock sold to a large extent at 69 $\frac{1}{2}$ @69, s. 30. This company paid its usual dividend on 1st inst. Spring Valley Water realized \$67.50 per share, and National Insurance Company \$72.50. The San Francisco and Occidental Insurance companies declared their usual quarterly dividends—4 $\frac{1}{2}$   $\frac{3}{4}$  cent. on their capital stock—during the past week. State Telegraph sold yesterday at \$29.

Legal Tenders sold quite freely at  $74\frac{7}{8}$ @  $74\frac{3}{4}$ . At the close  $74\frac{1}{2}$  is bid, and 75 asked.

### MINING SHARE MARKET.

We refer our readers to the following tabular statement, giving the dividends paid and assessments levied by the various claims on the Comstock Lode, for the first quarter of 1867, as compared with that of 1866:

[illegible]

The foregoing table presents very interesting figures in regard to the present productiveness of seven of the most prominent silver mines in the State of Nevada. It will be observed that while a distribution of \$790,000 was made in dividends by these companies during the past three months, only \$90,000 were so disbursed during the same period in 1866, showing an increase of \$700,000 in favor of 1867. We are pleased to record the gratifying statement as to the reduction of assessments levied by the various companies located on the same lode, which show a diminution of \$243,820 for the first quarter in 1867 as compared with the same period in 1866, a reduction of more than the whole amount levied during the quarter just closed. In February, 1866, no dividends were declared by the seven companies above named, but in the same month of the present year \$256,000 were disbursed. The dividends of these companies during the quarter closing with March, 1867, exceeded the assessments levied during the same period by nine other companies, on the same lode, \$559,220, while in the first quarter of 1866 the assessments exceeded the dividends \$384,600.

Considerable activity prevailed in the mining share market during the past week.

with a very general upward tendency in prices for most leading shares. A few stocks have advanced very materially under a legitimate improvement of the several claims, while others have been influenced by a strong "bull" operation—a movement not dependent upon encouraging advices, so far as we have been able to learn, lately received from these mines. The bullion receipts during the month of March have not been as large as usual, owing to the frequent interruptions on account of the weather; however, the supply of ore is quite large, and a considerable increase in the receipts is confidently expected in the future.

HALE & NORCROSS—held at previous quotations; no sales came to our knowledge during the past week. We are informed that the operations of this company are progressing very favorably. On the 24th ult. the new shaft had attained a depth of 210 feet.

**SAVAGE**—sold at enhanced rates, opening at \$2,025, advancing to \$2,200, receding to \$2,140, and closing yesterday at \$2,170. The ore extracted during the week ending March 30th amounted to 1,524 tons, the assay value of which is stated at \$55,362, equal to \$36.32 per ton. This ore was taken from the sixth and seventh stations. The dumps at the Curtis shaft being still inaccessible for wagons, no work was done during the week, except in starting the third station.

**YELLOW JACKET**—has been sold to a large extent at greatly improved figures, rapidly rising from \$820 to \$945, then selling at \$915, and closing at \$938. We are unable to gain reliable information as to the merits of this company's mine, since reports, as usual, are very tardy in reaching the office in this city, to the great detriment of many stockholders.

**CROWN POINT**—sold at \$870@ \$895, closing yesterday at \$890. This company is still working east and west from the 500-foot station, the former drift having attained, on the 29th ult., a distance of one hundred and thirty-one feet, and the latter eighty feet. During the week ending March 29th, 589 tons of ore were taken from the mine; the previous week, 523 tons were extracted.

**GOULD & CURRY**—declined from \$500 to \$400, seller 5, and at the close sold at \$375, seller 30. The bullion receipts of this Company for the month of March amounted to \$52,878.47.

**CHOLLAR-POTOSI**—advanced from \$253 to \$271 under large sales, then sold at \$262.50 and closed at \$290, b. 10. In the Santa Fe station the ore is said to be 42 feet wide—the best quality of the deposit being about 18 feet wide, and the balance is estimated at \$22 per ton. In breasting out south, over the winze in the north end, from the first station, new shaft, the ore is 18 feet wide and it is thought will yield \$40 to the ton. During the week ending March 29th, 1,342½ tons of ore were sent to custom mills; previous week, 1,093 tons.

IMPERIAL—has been sold to a considerable extent at an advance, improving from \$230 to \$250, closing at \$246 bid. This Company has commenced an incline on the front ledge of the Holmes mine, and it is said are producing more ore from this point than can be worked at their Gold Hill mill. The Imperial-Empire shaft is now down and timbered 842 feet.

OPHR--opened at \$232, and closed at \$234. Since the first instant this Company have been steadily drifting south on the tenth level.

EMPIRE—receded from \$185 to \$166, then sold at \$174, and closed yesterday at \$175. ... BELCHER sold at \$110 to \$112.50. ... CONFIDENCE at \$33 to \$36. ... OVERMAN, \$9 to \$14. ... Late telegrams from Aurora state that rich rock is now being taken out of the Monroe claim, part of the Wide West ledge.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$897,710.50.

**HALE & NORCROSS.**—The sixth annual report of this company has been handed us. The President congratulates the stockholders on the fact that the mine is now a dividend-paying institution. The assessments have aggregated \$875 per foot. For the year just ended, \$1,225 per foot has been returned in dividends; in one year, therefore, repaying the assessments of five years and giving a surplus of \$350 per foot, in addition to an amount of cash still on hand equal to \$333.22 per foot.

MINING SHAREHOLDERS' DIRECTORY.

[Compiled for every issue, from advertisements in the  
MINING AND SCIENTIFIC PRESS and other San  
Francisco Journals].

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY	DAY	DAY
		DELINQUENT.	OF SALE
Abernathie, Virginia, Nev., March 25, \$5.	April 25—May 27		
Alameda Coal M. Co., Corral Hollow	.....	Meeting April 21	
Ballou, Gold Hill, Feb. 9, \$10	.....	March 15—April 15	
Bell, El Paso, Tex., March 15, \$10	.....	March 15—April 15	
Belcher, Virginia, Nev., March 23, \$12.	.....	April 25—May 27	
Belcher M. Co., Vir., Nev., March 25, \$5.	.....	April 25—May 27	
Balswin, Vir., Nev., March 15, \$5	.....	April 25—May 27	
Coalinga, Calif., Feb. 21, \$1	.....	April 18—May 27	
Canamaro, Lander co., Nev., Feb. 14, \$20.	.....	Mar 29—May 27	
Chilipsona, Sonora, Mex., March 23, \$5.	.....	May 2—May 20	
Crown Point, Nev. dividend \$80.	.....	Payable March 15	
Diamond Cop., Del Norte, Cal., Feb. 4, \$2. March 23.	.....	April 15—May 27	
Diamond, Del Norte, Cal., Feb. 4, Annual	.....	March 15—April 15	
Diana, Lander co., Nev., March 23, \$5.	.....	May 2—June 4	
Dardanelles, Del Norte co., Cal., March 16.	.....	May 4—June 1	
Emilia, Querrero, Mex., Feb. 20, 75c.	.....	Mar 22—April 8	
Eureka Coal M., Alameda co., Mich. 7.	.....	March 15—April 15	
Excelsior, Del Norte, Cal., Feb. 15.	.....	Meeting May 1	
Empire M. & M., Nev., dividend \$10.	.....	Payable March 15	
El Cobre, Sonora, Mex., Mich 12, \$1.	.....	April 15—May 27	
El Cobre, Sonora, Mex., Mich 12, \$1.	.....	April 15—May 27	
Forest Springs, Grass Valley, Cal., Mich 13, \$40.	April 13—Apr 30		
Grand Central, Yuma co., A. T., Mich 1, \$1.	April 8—April 30		
Gold & Curry, Virginia, Nev., dividend \$80.	Payable Jan 1		
Golden Rule, Cal., div. 4 3/4 ct. on capst'k.	Payable March 1		
Gold Quarry, Placer co., Nev., Feb. 1, \$20.	.....	April 22—May 13	
Gold Quarry, Placer co., Nev., Feb. 1, \$20.	.....	April 22—May 13	
Hancock Cop. M., Del Norte co., Mich 4, \$10.	April 1—April 23		
Hope Cravel, Nev. co., Cal., Feb. 25, \$1.	.....	April 3—April 23	
Hale & Norcross, Virginia, Nev., div. \$125.	Payable March 1		
Imperial, Virginia, Nev., div. \$15.	.....	Payable March 1	
Julia, Storey Co., Nev., Mich 14, \$1.	.....	April 18—May 27	
Keystone M., Calaveras co., Feb. 20, \$10.	.....	April 29—May 20	
La Blanca, Sonora, Mex., Jan 31, \$150.	.....	Mar 12—April 1	
Met Tenabo, Lander co., Nev., Feb. 15, \$1.	.....	Mar 21—April 11	
North Star, Lander co., Nev., Mich 14, \$5.	.....	April 24—May 13	
Nuestra Senora de Oudape, Mich 15, \$1.	.....	April 17—May 13	
Overman, Storey co., Nev., Mich 12, \$10.	.....	April 18—May 27	
Patrotnela & Dolores, Mex., Feb. 1, \$3.	.....	Mar 5—Mar 27	
Rattlesnake, Yuba co., March 22, \$1.	.....	April 25—May 14	
Santa Cruz, Santa Cruz co., Mich 9, 50c.	.....	April 15—April 30	
Santa Cruz, Santa Cruz co., Mich 9, 50c.	.....	April 15—April 30	
Shoshone S. M., dividend, \$5 per share.	Payable March 1		
Savage Virginia, Nev. dividend \$100.	.....	Payable March 1	
Snoky Valley, dividend.	.....	Payable Feb 1	
Salmon, Nevada, Nev., March 15, \$10.	.....	April 15—May 27	
Salmonander, Calaveras co., Feb. 11, 50c.	.....	Mar 15—April 10	
Sierra, Drytown, Cal., Jan. 18, \$200.	.....	Sale April 1	
Sierra, Douglas co., Nev., March 23, \$30.	.....	April 15—May 27	
Tellurium, Amador co., Cal., Mich 9, \$1.	.....	April 13—April 27	
Ventana, Durango, Mex., Mich 10, \$1.50.	.....	April 6—April 27	
Whiteatch, Lander co., Nev., Feb. 14, \$15.	.....	Mar 23—Mar 27	
Whiteatch, Lander co., Nev., Feb. 14, \$15.	.....	Mar 23—Mar 27	
Yosemite, Humboldt co., Nev., Jan. 26, \$175.	Mar 1—Mar 23		
Yellow Jacket, Gold Hill, div. \$0 50h.	.....	Payable Jan 1	

\*Those marked with an asterisk (\*) are advertised in the Journal.

To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at a times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 50 sample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the *MINING AND SCIENTIFIC PRESS* a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

**THE PACIFIC BRASS FOUNDRY**, is another establishment to be added to the list of recent enterprises, which are continually springing up in the mechanical line. It is situated on Fremont street, between Mission and Howard, and conducted by a company composed of working men and practical mechanics, Mr. G. E. Smith being the business agent.



## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

## Monday, April 1.

10 shs Golden Rule at 10 per share.  
 60 shs Ophir at 225 per foot s 30.  
 96 shs Ophir at 225 per foot.  
 12 shs Ophir at 227.50 per foot.  
 8 shs Gould & Curry at 435 per foot s 10.  
 12 shs Gould & Curry at 499 1/2 per foot.  
 20 shs Imperial at 250 per share.  
 16 shs Imperial at 233 per share.

1 sh Yellow Jacket at 830 per foot, h 10.  
 60 shs Confidence at 34 1/2 per share.  
 2 shs Cal Steam Nav Co at 65 1/2 per share.  
 10 shs Chollar-Potosi at 224 per foot.  
 10 shs Chollar-Potosi at 226 per foot.  
 6 shs Chollar-Potosi at 225 per foot s 10.  
 3 shs Chollar-Potosi at 228 per foot, b 30.  
 3 shs Savage at 2100 per foot.  
 1 sh Savage at 2100 per foot.  
 1 sh Savage at 2100 per foot, s 30.  
 15 shs Empire M & M Co. at 185 per share.  
 20 shs Crown Point at 890 per foot.  
 12 shs Crown Point at 885 per foot.  
 4 shs Crown Point at 900 per foot, b 15.

## AFTERNOON SESSION.

100 shs Sierra Nevada at 5 per share.  
 34 shs Ophir at 227 1/2 per foot.  
 3 shs Empire M & M Co. at 182 1/2 per sh.  
 2 shs Empire M & M Co. at 184 per sh.  
 3 shs Empire M & M Co. at 186, b 30.  
 2 shs Empire M & M Co. at 185 per sh.  
 2 shs Belcher at 112 per foot.  
 35 shs Confidence at 34 per share.  
 20 shs Confidence at 34 per share, s 30.  
 10 shs Confidence at 35 per share b 30.  
 4 shs Gould & Curry at 500 per foot.  
 10 shs Chollar-Potosi at 226 per foot b 30.  
 6 shs Chollar-Potosi at 226 per sh, s 10.  
 20 shs Chollar-Potosi at 251 per foot.  
 12 shs Chollar-Potosi at 258 per foot.  
 1 sh Savage at 2200 per foot.  
 1 sh Savage at 2100 per foot.  
 2 shs Savage at 2100 per foot, s 60.  
 6 shs Yellow Jacket at 817 1/2 per foot b 10.  
 6 shs Yellow Jacket at 866 per foot b 10.

## Tuesday, April 2.

22 shs Overman at 14 1/2 per share.  
 50 shs Crockett at 2 1/2 per share.  
 8 shs Cal Steam Nav Co at 74 1/2 per sh.  
 6 shs Chollar-Potosi at 227 per foot s 10.  
 6 shs Chollar-Potosi at 225 per foot s 30.  
 7 shs Chollar-Potosi at 260 per foot, h 30.  
 4 shs Chollar-Potosi at 227 1/2 per foot b 6.  
 15 shs Empire M & M Co. at 179 1/2 per sh.  
 3 shs Empire M & M Co. at 181 per sh, s 10.  
 1 sh Empire M & M Co. at 182 1/2 per sh, h 30.  
 5 shs Savage at 2125 1/2 per foot.  
 1 sh Savage at 2095 per foot s 60.  
 8 shs Yellow Jacket at 875 1/2 per foot.  
 2 shs Yellow Jacket at 895 1/2 per foot, b 10.  
 3 shs Yellow Jacket at 880 1/2 per foot.  
 4 shs Yellow Jacket at 875 1/2 per foot, s 30.  
 10 shs Confidence at 33 per share s 5.  
 20 shs Daney at 10 per foot.  
 40 shs Sierra Nevada at 5 per share.  
 10 shs Spring Valley W W Co at 67 1/2 per sh.  
 12 shs Crown Point at 875 1/2 per foot.  
 4 shs Crown Point at 880 per foot b 30.  
 4 shs Crown Point at 880 per foot, s 60.  
 4 shs Crown Point at 870 per foot h 5.  
 10 shs Imperial at 235 per share.  
 6 shs Imperial at 228 per share.  
 5 shs Imperial at 226 per share, s 30.  
 12 shs Imperial at 237 per share, s 10.  
 8 shs Imperial at 210 per share, h 30.  
 15 shs Bullion at 23 1/2 per share.  
 10 shs Bullion at 23 per share s 30.  
 5 shs Bullion at 23 per share s 30.  
 5 shs Bullion at 23 per share s 30.  
 4 shs Gould & Curry at 480 per foot s 10.  
 8 shs Gould & Curry at 465 per foot.  
 72 shs Ophir at 229 1/2 per foot, h 10.  
 \$5,000 Legal Tender Notes at 74 1/2 c.

## AFTERNOON SESSION.

17 shs Bullion at 23 1/2 per share.  
 20 shs Confidence at 33 per share.  
 25 shs Confidence at 34 per share.  
 6 shs Confidence at 32 1/2 per share s 30.  
 2 shs Cal Steam Nav Co at 75 per cent.  
 20 shs Chollar-Potosi at 227 per foot.  
 22 shs Chollar-Potosi at 262 per foot.  
 10 shs Chollar-Potosi at 260 per foot b 30.  
 6 shs Chollar-Potosi at 260 per foot, s 30.  
 30 shs S F Gas Co. at 69 1/2 per share, s 30.  
 50 shs S. F. Gas Co. at 69 1/2 per cent.  
 1 sh Empire M & M Co. at 179 per sh.  
 4 shs Imperial at 240 per share.  
 4 shs Imperial at 242 1/2 per share.  
 20 shs Imperial at 243 per share, b 3.  
 24 shs Ophir at 228 per foot.  
 12 shs Gould & Curry at 480 per foot.  
 33 shs Yellow Jacket at 895 1/2 per foot.  
 1 shs Yellow Jacket at 900 per foot h 10.  
 10 shs Yellow Jacket at 890 per foot b 15.  
 1 sh Yellow Jacket at 900 per foot b 30.  
 1 sh Yellow Jacket at 900 per foot, a 3.  
 1 sh Yellow Jacket at 887 1/2 per foot s 30.  
 Amount of sales.....\$170,143 00

## Wednesday April 3.

8 shs Gould & Curry at 470 per foot s 30.  
 36 shs Gould & Curry at 480 1/2 per foot.  
 25 shs Confidence at 32 1/2 per share.  
 1 sh Belcher at 112 1/2 per foot.  
 2 shs Savage at 2140 per foot.  
 4 shs Savage at 2135 per foot.  
 2 shs Savage at 2140 1/2 per foot, s 60.  
 4 shs Savage at 2200 1/2 per foot b 10.  
 26 shs Ophir at 227.50 per foot.  
 3 shs Cal Steam Nav Co. at 75 1/2 per cent.  
 2 shs Cal Steam Nav Co at 74 per cent.  
 38 shs Chollar-Potosi at 260 1/2 per foot.  
 6 shs Chollar-Potosi at 260 per foot b 30.  
 10 shs Chollar-Potosi at 260 1/2 per foot, s 10.  
 1 sh Chollar-Potosi at 267.60 per foot s 30.  
 6 shs Chollar-Potosi at 269 per foot.  
 15 shs Bullion at 23 1/2 per share.

16 shs Crown Point at 875 1/2 per ft s 30.  
 16 shs Crown Point at 890 1/2 per ft s 30.  
 12 shs Crown Point at 890 per foot b 5.  
 23 shs Yellow Jacket at 912.50 per foot.  
 2 shs Empire M & M Co at 170 1/2 per sh.  
 5 shs Empire M & M Co. at 193, s 30.  
 5 shs Imperial at 245 per share, s 15.  
 6 shs Imperial at 245 per share.  
 5 shs Imperial at 250 per share, b 30.

## AFTERNOON SESSION.

20 shs Gould & Curry at 455 1/2 per foot.  
 10 shs Sierra Nevada at 5 per share.  
 8 shs Empire M & M Co. at 165 1/2 per sh.  
 3 shs Chollar-Potosi at 268 per foot.  
 3 shs Chollar-Potosi at 270 per foot.  
 2 shs Chollar-Potosi at 269 per foot.  
 3 shs Imperial at 247.50 per share.  
 3 shs Imperial at 246 per share.  
 5 shs Imperial at 252 per share b 30.  
 1 sh Savage at 2160 per foot, b 7.  
 5 shs Cal Steam Nav Co at 75 per ct.  
 84 shs Ophir at 228 per foot.  
 12 shs Ophir at 232 per foot.  
 36 shs Ophir at 230 per foot, s 30.  
 24 shs Ophir at 233 per foot h 10.  
 38 shs Confidence at 35 1/2 per share.  
 16 shs Crown Point at 890 per foot.  
 16 shs Crown Point at 885 per foot.  
 21 shs Crown Point at 830 per foot s 30.  
 30 shs Belcher at 110 per share s 30.  
 1 sh Belcher at 112.50 per foot.  
 5 shs Yellow Jacket at 935 per foot s 30.  
 Amount of sales.....\$202,504 00

## Thursday, April 4.

9 shs Empire M & M Co. at 166 1/2 per sh.  
 5 shs Empire M & M Co. at 165 per sh, s 30.  
 23 shs Chollar-Potosi at 262 1/2 per foot.  
 6 shs Imperial at 244 per share, s 10.  
 20 shs Imperial at 215 1/2 per share.  
 3 shs Savage at 2100 per foot, s 60.  
 8 shs Gould & Curry at 425 per foot s 6.  
 4 shs Gould & Curry at 400 per foot, s 6.  
 8 shs Crown Point at 885 per foot.  
 12 shs Crown Point at 890 per foot.  
 4 shs Crown Point at 890 per share b 30.  
 4 shs Crown Point at 890 per share b 30.  
 6 shs Yellow Jacket at 910 1/2 per foot.  
 10 shs Confidence at 34 per share.  
 10 shs Confidence at 36 per share.  
 10 shs Confidence at 35 per share, s 30.  
 10 shs Confidence at 36 per share, b 30.  
 16 shs Confidence at 37 per share, h 30.  
 27 shs Ophir at 230 1/2 per foot.  
 24 shs Ophir at 224 per foot, b 30.  
 3 shs Cal Steam Nav Co at 74 1/2 per share.  
 25 shs Spring Valley Water at 67 1/2 per sh.  
 5 shs San Francisco Gas Co. at 61 1/2 per ct.  
 \$10,000 Legal Tender Notes at 74 1/2 c.  
 \$11,000 Legal Tender Notes at 74 1/2 c.  
 \$5,000 Legal Tender Notes at 74 1/2 c s 30.

## AFTERNOON SESSION.

20 shs Overman at 12 per share.  
 20 shs Overman at 10 per foot.  
 2 shs Empire M & M Co. at 170 1/2 per sh.  
 3 shs Empire M & M Co. at 174 per sh, b 30.  
 10 shs Bullion at 24 per share.  
 6 shs Bullion at 26 per share.  
 15 shs Bullion at 24.50 1/2 per share s 30.  
 2 shs Savage at 2140 1/2 per foot, s 60.  
 1 sh Savage at 2130 per foot, s 60.  
 1 sh Savage at 2150 per foot, s 60.  
 21 shs Chollar-Potosi at 260 1/2 per foot.  
 23 shs Confidence at 36 1/2 per share.  
 5 shs Confidence at 37 per share, b 30.  
 8 shs Crown Point at 895 per foot.  
 10 shs Imperial at 246 per share b 5.  
 10 shs Imperial at 248 per share, b 5.  
 10 shs Imperial at 250 per share, b 15.  
 6 shs Imperial at 248 1/2 per share s 30.  
 5 shs Imperial at 252.50 per share b 30.  
 19 shs Yellow Jacket at 915 1/2 per foot.  
 2 shs Yellow Jacket at 915 per ft, s 30.  
 7 shs Yellow Jacket at 917 1/2 per foot.  
 10 shs National Ins. Co. at 72.50 per share.  
 7 shs S. F. Gas Co at 69 1/2 per cent.  
 20 shs S F Gas Co. at 69 per share s 30.  
 Amount of sales.....\$212,791 00

## Friday, April 5.

4 shs Crown Point at 890 per foot.  
 2 shs Bullion at 25 per share.  
 10 shs Confidence at 35 per share b 30.  
 2 shs Cal Steam Nav Co at 70 per cent.  
 10 shs Overman at 10 per share.  
 10 shs Overman at 9 per share, s 10.  
 20 shs Sierra Nevada at 4.50 per share.  
 6 shs Imperial at 250 per foot, b 10.  
 10 shs Imperial at 248 1/2 per share.  
 1 sh Savage at 2160 per foot b 5.  
 1 sh Savage at 2175 per foot.  
 10 shs State Telegraph at 23 per cent.  
 13 shs Chollar-Potosi at 272 1/2 per foot.  
 3 shs Chollar-Potosi at 275 per foot, b 10.  
 18 shs Chollar-Potosi at 275 1/2 per foot, s 10.  
 6 shs Chollar-Potosi at 277 per foot, b 30.  
 7 shs Chollar-Potosi at 275.50 per foot.  
 38 shs Ophir at 232 per foot, b 30.  
 15 shs Ophir at 229 1/2 per foot.  
 1 sh Belcher at 112.50 per foot h 10.  
 1 sh Belcher at 111 per foot.  
 15 shs Daney at 10 per share.  
 2 shs Bullion at 25 per share.  
 2 shs Bullion at 25 per share, s 30.  
 6 shs Bullion at 27 per share b 30.  
 20 shs Bullion at 26 per share s 30.  
 21 shs Yellow Jacket at 925 per foot s 30.  
 3 shs Yellow Jacket at 915 1/2 per foot b 30.  
 8 shs Yellow Jacket at 922 1/2 per foot s 30.  
 2 shs Yellow Jacket at 920 1/2 per foot b 15.

## AFTERNOON SESSION.

3 shs Cal Steam Nav Co at 74 per cent.  
 3 shs Belcher at 110 1/2 per foot.  
 10 shs Bullion at 25 1/2 per foot.  
 1 shs Gould & Curry at 375 per ft s 30.  
 50 shs Overman at 10 per share.  
 120 shs Ophir at 220 1/2 per foot.  
 60 shs Ophir at 232 per foot b 30.  
 60 shs Ophir at 232 per foot, b 15.  
 12 shs Ophir at 235 1/2 per foot.  
 15 shs Sierra Nevada at 5 per share.  
 12 shs Crown Point at 890 per foot.  
 5 shs Yellow Jacket at 920 1/2 per foot, s 30.  
 1 sh Yellow Jacket at 930 per ft s 30.  
 21 shs Yellow Jacket at 930 1/2 per ft.  
 3 shs Yellow Jacket at 945 per foot b 30.  
 6 shs Yellow Jacket at 940 per foot, b 5.  
 4 shs Confidence at 31 1/2 per share.  
 8 shs Chollar-Potosi at 277.50 1/2 per ft.  
 10 shs Chollar-Potosi at 285 1/2 per ft, s 30.  
 6 shs Chollar-Potosi at 285 1/2 per foot s 6.  
 5 shs Chollar-Potosi at 290 per foot b 30.  
 5 shs Chollar-Potosi at 255 per foot s 10.  
 4 shs Savage at 2160 1/2 per foot.  
 5 shs Empire M & M Co. at 175 per sh.  
 Amount of sales.....\$123,115 00

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

## FRIDAY EVENING, April 5, 1887.

MISCELLANEOUS STOCKS.	Bid.	Askd.
United States 7 3/4 Bonds, June Issue.....	80	81
California State Bonds, 1887.....	74 1/2	75
San Francisco Bonds, 1881.....	100	102
San Francisco City Bonds, 1883.....	80	85
San Francisco City and Co. Bonds, 1883.....	72	74
San Francisco City and Co. Bonds, 1883.....	80	85
San Francisco City and Co. Bonds, 1883.....	80	84
San Francisco City and Co. Bonds, 1884.....	81	81
San Francisco City and Co. Bonds, 1884.....	80	84
San Francisco City and Co. Bonds, 1884.....	80	84
Sacramento City Bonds.....	18	—
Sacramento County Bonds, 66.....	60	65
Stockton City Bonds.....	80	85
Yuba County Bonds, 188.....	75	80
Santa Clara County Bonds, 75.....	70	75
Butte County Bonds, 188.....	70	75
San Mateo County Bonds, 75.....	—	85 1/2
California Steam Navigation Co.....	70	74
Spring Valley Water Co.....	29	3 1/2
State Telegraph Co.....	29	3 1/2

## GAS COMPANIES.

San Francisco Gas Co.....	69	70
Sacramento Gas Co.....	—	60

## RAILROADS.

Sacramento Valley Railroad.....	—	—
San Francisco and San Jose Railroad.....	40	45
Omnibus Railroad.....	54	60
Central Railroad.....	—	—
North Beach and Mission Railroad.....	49	50
Front Street, Mission and Ocean Railroad.....	—	18

## BANKING INSTITUTIONS.

California Loan and Savings Society.....	—	—
Bank of Pacific and Union Loan Society.....	—	—
The Bank of California.....	134	—

## INSURANCE COMPANIES.

Fireman's Fund Insurance Co.....	102 1/2	105
Pacific Insurance Co.....	125	127
San Francisco Insurance Co.....	400	400
Merchants' Mutual Marine Insurance Co.....	1350	1750
Union Insurance Co.....	102 1/2	110
California Home Insurance Co.....	—	92
Home Mutual Insurance Co.....	90	95
Occidental Insurance Co.....	72	72 1/2

## MINING STOCKS—WASHOE DISTRICT.

Alpha.....	175	200
Baltimore American.....	—	8
Belcher.....	110	112
Buttler, G. B.....	25	26
Crown Point.....	870	900
Confidence.....	30	35
Chollar-Potosi.....	275	280
Dancy.....	9	10
Exchequer.....	1	—
Empire Mill and Mining Co.....	177	185
Gould & Curry.....	375	380
Hale & Norcross.....	8600	4000
Imperial.....	216	250
Lady Bryan.....	230	235
Ophir.....	230	235
Overman.....	9	10
Savage.....	2170	2190
Yellow Jacket.....	930	940
Golden Rule, California.....	10	16

## San Francisco Market Rates.

## Wholesale Prices.

FRIDAY, March 29, 1887.	FRIDAY, March 29, 1887.
Flour, Extra, 3 bbl.....	\$5.60 @ \$5.75
Do. Superfine.....	5.00 @ 5.25
United States, 100 lbs.....	2.00 @ 2.25
Wheat, 30 lbs.....	1.60 @ 1.80
Oats, 30 lbs.....	1.00 @ 1.15
Barley, 30 lbs.....	80 @ 90
Potatoes, 100 lbs.....	2.00 @ 3.00
Potatoes, 30 lbs.....	75 @ 1.25
Hay, 1 ton.....	6.00 @ 12.50
Live Oak Wood, 1 cord.....	9.00 @ 10.00
Beef, on foot.....	17 1/2 @ 18
Beef, extra, dressed.....	11 @ 12
Sheep, on foot.....	4.00 @ 6.00
Hogs, on foot.....	7 @ 7 1/2
Hogs, dressed.....	10 @ 11 1/2

## GROCERIES, ETC.

Sugar, crushed, 3 bbl.....	13 1/2 @ 13 1/2
Do. China.....	10 @ 10
Coffee, Costa Rica, 3 bbl.....	23 @ 24
Do. Rio.....	23 @ 25
Tea, Japan, 3 bbl.....	15 @ 15
Do. Green.....	9 @ 1 25
Hawaiian Rice, 3 bbl.....	6 @ 7
China Rice, 3 bbl.....	6 1/2 @ 7
Coal Oil, 3 gallon.....	60 @ 62 1/2
Candles, 3 lb.....	6 @ 2 1/2
Butter, 3 lb.....	20 @ 21 1/2
Butter, 3 lb.....	18 @ 19
Cheese, 3 lb.....	15 @ 16
Eggs, 3 dozen.....	25 @ 27
Lard, 3 lb.....	13 @ 14
Ham and Bacon, 3 lb.....	12 @ 15
Shoulders, 3 lb.....	12 1/2 @ 13

## Retail Prices.

Butter, California, fresh, 3 lb.....	50 @ 55
do. pickled, 3 lb.....	25 @ 30
do. Oregon, 3 lb.....	20 @ 25
do. New York, 3 lb.....	35 @ 40
Cheese, 3 lb.....	15 @ 25
Honey, 3 lb.....	30 @ 40
Eggs, 3 dozen.....	30 @ 37 1/2
Lard, 3 lb.....	12 @ 16
Ham and Bacon, 3 lb.....	18 @ 22 1/2
Crabapples, 3 gallon.....	1.00 @ 1 25
Potatoes, 3 lb.....	1 1/2 @ 2
Potatoes, sweet, 3 lb.....	5 @ 6
Tomatoes, 3 lb.....	5 @ 6
Onions, 3 lb.....	3 @ 5
Apples, No. 1, 3 lb.....	3 @ 5
Pears, Table, 3 lb.....	3 @ 5
Plums, dried, 3 lb.....	13 @ 15
Peaches, dried, 3 lb.....	11 @ 13
Oranges, 3 dozen.....	50 @ 55
Lemons, 3 dozen.....	50 @ 55
Chickens, nice, 3 lb.....	50 @ 75
Turkeys, 3 lb.....	20 @ 25
Soap, Yale, 3 lb.....	20 @ 25
Soap, Castile, 3 lb.....	15 @ 18

## San Francisco Metal Market.

## PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, March 29, 1887.	FRIDAY, March 29, 1887.
Iron.—Duty: Pig, 39 per ton; Rail, 39 1/2 per ton; Bar, 10 1/2 c per lb; Sheet, polished, 3 c per lb; common, 1 1/2 c per lb; Plate, 1 1/2 c per lb; Pipe, 1 1/2 c per lb; Galvanized, 2 1/2 c per lb.	
Steel and English Pig Iron 39 1/2 per ton.....	\$38.00 @ \$37.00
White Pig Iron.....	50.00 @ 55.00
Reinforced Bar, bad assortment.....	— @ —
Reinforced Bar, good assortment.....	— @ —
Bolter, No. 1 to 5.....	— @ —
Plate, No. 5 to 9.....	— @ —
Sheet, No. 10 to 13.....	— @ —
Sheet, No. 14 to 17.....	— @ —
Sheet, No. 24 to 27.....	— @ —
Copper.—Duty: Sheathing, 3 1/2 c per lb; Pig and Bar, 2 1/2 c per lb.	
Sheathing, 3 lb.....	34 @ 38
Sheathing, 1 lb.....	13 @ 15
Sheathing, Old Yellow.....	13 @ 14
Bolts.....	13 @ 18
Composition Nails.....	30 @ 32
Tin Plates.....	— @ —
Plates, Charcoal, 1 x 3 box.....	15.00 @ —
Plates, 1 C Charcoal.....	13.00 @ —
Roofing Plates.....	11.00 @ —
Banca Tin, Sheet.....	25 @ —
Steel.—English Cast Steel, 3 lb.....	12 1/2 @ 15
Quicksilver.....	— @ 60
For export.....	— @ 60
Zinc.—Sheet.....	— @ 11
Lead.—Pig.....	— @ 11
Sheet.....	— @ 10
Pipe.....	— @ 10
Bar.....	— @ 10
Box.....	— @ 23

## Mineral Land Law Blanks FOR SALE.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner* of March 23d: In Mogul Dist. the Leviathan show rich smelting ore. The Tarshish has recently cut into quartz. Mr. Ray is working on the Mountain lode, a continuation of the Florence, and expects to see the color soon. The Winchester company will, as soon as any suitable reduction works are up, make another trial of their ores. In Silver Mountain Dist., the Mountain No. 1, and Pennsylvania companies, whose claims are on two of the mother lodes of that district, expect to tap their veins where they will pay, before another winter.

Nitro-glycerine is to be tried in the Mowyer tunnel for blasting purposes.

The Graff Smelting company has contracted to work 10,000 tons of ore for the Morning Star company.

From the *Silver Mountain Bulletin* of March 23d: The California Illinois company are now in with their tunnel 530 ft., having made seven ft. last week. The cutting in this tunnel has been in the hardest character of rock yet found in this district.

In the Pennsylvania the lower tunnel is now in 525 ft. The rock is difficult to work, except when a seam is struck; the distance run per week varying from seven to 11 ft.—two shifts.

Operations have been resumed on the George Washington. Considerable damage had been done to the buildings of the company by the snow. The tunnel is to be extended 300 ft. on the ledge. The rock is soft and easily worked. It is expected that two months' work will put the mine in such shape that there will be no difficulty in supplying the mill with ore. The furnaces are to be changed at an expense of \$1,200. Four of the Freiberg barrels are to be removed, and their places supplied by as many Wheeler pans.

The tunnel of Mountain company No. 1 is now in 1,063 ft.—11 ft. having been run the week ending Saturday, the 16th inst.

A telegram to the *Alta* from Markleeville, April 3d, says: The Schenectady company have struck a very rich ledge in the Tarshish claim, at Monitor, 300 ft. deep. Pure silver may be cut out of the rock, and the ore assays \$500 per ton.

## Anador County.

From the *Ledger* of March 30th: William Roberts, better known as "Old Bob," has sold one-half of his quartz claim, situated on Walker's field, adjoining town, for \$10,000. Mr. Jas. Morgan of the Oneida mine is the purchaser. Work will at once be commenced on the mine.

## Calaveras County.

From the *Chronicle* of March 23d: Paul & Co., in Chile Gulch, have recently struck through into pay dirt of great richness. The tunnel is 850 ft. long, through solid granite, and cost \$30,000. The gravel at the point where the tunnel breaks through the bedrock, pays an average of \$14 to the carload, and still the main lead has not been reached.

Martin & Co. have an extensive hydraulic claim in the same vicinity, which pays remarkably well. Water is conveyed to the claim through iron pipes a distance of 1,000 ft., with a fall of between 300 and 400 ft.

The tunnel in the "Henry Guy" claim, belonging to Mr. Shaw, has been driven to a point beneath the gravel, and as soon as a streak of extremely hard ledge is gone through, a shaft will be sunk to intersect the tunnel, and operations commenced.

Diacre & Co., who purchased the old "Bob Paul" claim, are doing exceedingly well. Last week they cleaned up \$400, the result of five days work.

From the *Copperopolis Courier* of March 30th: We were shown some very rich specimens of gold-bearing quartz on Wednesday last, taken from a claim and extension on the eastern side of Salt Spring Valley, directly opposite the Gold Hunter claim. In the specimens from the main claim it was hard to tell which predominated, the quartz or the yellow metal. The lead is quite extensive, and our informant says that the lucky owners have pounded out with a mortar over \$1,000 in solid gold. The rock taken from the extension has been tested, and shows \$60 to the ton.

The San Andreas *Register* of March 30th says, the Spring Valley mill is now in full blast, and rich rock is now being taken out.

*Times* letter from Camanche, March 26th: Mr. Joseph Zimmerman recently cut a tunnel into a hill, and from the first pan of dirt prospected, washed out 20 cents. A little further in he took out a second panful of dirt, which yielded \$1.50. He then, in company with three others, took up four

claims, under the new mining laws, adopted March 10th. This discovery created quite an excitement. A great many other claims were immediately taken up in the neighborhood, some of which prospect from one cent to 25 cents to the pan, paying from the top down. There are from two to 12 ft. of gravel. Water to these claims will soon be supplied from the Mokelumne Hill ditch. There are from five to eight miles of this mining ground, some of which, a year from now, I think will pay as high as \$25 per day to the hand.

## El Dorado County.

From the *Placerville Courier* of March 30th: Three of Gaston's pans have been put into the Pacific mill. We believe they will be a success, and that those sulphurets can be made to pay. No thorough test has, however, yet been made.

Kelsey letter to same: There is a controversy between the owners of the Bald Eagle. A majority have incorporated, but a portion refuse to sign the trust deed. A lawsuit will probably result. The rock is rich, thousands of dollars having been pounded out in a hand-mortar.... Stewart, of Placerville, thinks he has struck it at Kelsey.... The Blue Ledge mill and mine has passed into the hands of Lyon of San Francisco.

## Kern County.

From the *Havilah Courier* of March 23d: The last clean-up of the Joe Walker mine yielded \$10,000 after a run of 10 days. Large as it is, this is not over the average yield of the Joe Walker. Mining interests in this county are attracting merited attention from capitalists and miners.

Long Tom correspondence of same gives these items: The Long Tom mine has been worked to a depth of 200 ft. through a mass of gold-bearing quartz, averaging in width from five to six ft. The yield cannot be less than \$20,000 per month. The company has a 10-stamp mill in operation day and night. Work on the Kirby Smith is being prosecuted with great vigor and promises a good yield. Pyle & Collins, owners of the Robert Johnson, are crushing in arastra a good quality of quartz. I am informed that \$60 per ton was refused for quartz on the dump. The Tucker Brothers and Bell are gridding away with arastras on A No. 1 quartz. Work has been suspended on the claim of French, McDonald & Co., until supplies and machinery can be brought in.

## Klamath County.

From the *Humboldt Times* of March 23d: The Red Cap Copper Mining company have shipped by the schooner Amanda Ager, hence for San Francisco, 10 tons of very superior ore from their mine at Red Cap, in Klamath county.

The Yreka *Union* of same date says: We learn that there are several claims along down the Klamath that are paying very handsomely now. We have not definite reports of the amounts taken out of different claims.

## Mariposa County.

The *Mariposa Mail* has a letter from Coulterville, with these items: Messrs. Douglass & Co., who have purchased the old Goodman & Hubbell vein, have about 30 men employed at the French mill which they have rented for a season for the purpose of testing their ores. The Maxwell Creek Mining Co., generally known as the French Co., have leased or conditionally sold their property to some parties who have entered upon and are now making arrangements to work it. Dr. McLean has purchased the Pino Blanco mine, and has had some eight or ten hands at work all winter. A rich vein has recently been struck on Skunk Gulch, a tributary of Hall's Gulch—this latter emptying into the Merced near McCahe's Flat.

## Nevada County.

From the *Transcript* of March 27th: Fifty tons of rock from the Liberty ledge, located at Eureka, has been worked in Booth & Co's arastra, at that place, and yielded \$1,500.

Same of 30th: Yesterday, in the south drift of the Star Spangled Banner mine, 230 ft. below the surface, a streak a foot wide was struck, which is nearly two-thirds gold. The ledge is six ft. wide, and this rich stratum runs through it. The rich streak was found several days ago in the south drift, and has been gradually widening and growing richer until it attained its present size and value. The gold seems to be evenly distributed, and occupies fully two-thirds of the mass.

Same of April 2d: Crosby & Co. are prospecting a ledge near McCourtney's Crossing, on Bear River. The lead, which was eight inches at the surface, became two ft. a short distance below. An arastra was erected, and the first working of the rock paid \$30 per ton.

The Last Chance Copper Mining company is taking steps to procure a patent to their mine.

Same of 3d: We understand a rich strike was made on Monday in the Mattingly lead. The incline is now down 190 ft. below the surface, and the ledge is large and well defined. The rock contains a large amount of free gold.

A party of Cornishmen have contracted with the Star Spangled Banner company to put up a "huddle," such as is used in the mines of Cornwall, below the pans. They will work it for four months, and give the company one-fifth of the net proceeds.

From the *Gazette* of April 1st: The mill of the Eagle company, on the California ledge, situated half a mile from town, was started up for regular work on Saturday last. It has 10 stamps, five Bradford's separators, and galvanized copper plates. The company has out now to commence on between 300 and 400 tons of rock.

From the *Grass Valley National*: Griffin, Larrison & Co., on Indian Creek, five miles east of Grass Valley, have struck a bed of gravel from 80 to 90 ft. in width, supposed to be an extension of the celebrated "Blue lead." The company have about 1,000 ft. of ground.

## Placer County.

From the *Grass Valley Union* of March 29th: The Ione company are to sink their shaft 100 ft. deeper.... Work is about being commenced on the Union Jack.

EXCELSIOR.—The *Nevada Gazette* of April 3d has the following: Frank F. Adler, who arrived from Meadow Lake on Monday, brought the amalgam from 15½ tons of ore from the Golden Eagle ledge, and crushed at the company's mill. According to previous reports, the yield of the last crushing will be \$24 per ton. The California company have struck their ledge at a depth of 90 ft., and are running through the foot-wall. The mill of the Mohawk and Montreal company will be completed and in running order about the middle of this month.

From the *Herald* of March 30th: The Harpending mine is proving very rich. They made a four days' run this week with 20 stamps, and cleaned up 500 ozs. of amalgam, which will yield \$3,500 in gold. In a few days more they will commence running their other 20 stamps.

Captain Mallett, after a three weeks' run with five stamps, cleaned up on Saturday evening last five pansfull of amalgam, which he has not yet retorted.

From the *Stars and Stripes* of March 27th: Mr. Rousch recently purchased one-half of the "Old Rip" claim at Bath, paying therefor the sum of \$10,000 cash. This purchase makes him, we believe, the sole owner of the claim. We are informed that he intends to put up a mill at an early day.

Dr. E. B. Harris has bought the Ambruster claim, on Georgia Hill, near Yankee Jim's, for \$10,000, after having had, by previous agreement, control of the claim for 16 days. There is a five-stamp mill near the mouth of the tunnel. The Ambruster is an old hydraulic claim. The bank presents a face 60 or 80 ft. in height, and perhaps 120 to 150 ft. across. The claims have a frontage of 300 ft., and run back to the center of the hill. The streak of blue cement is four ft. thick, and the lower ledge is 10 ft. above the bedrock. Several pans of dirt were tried while we were present, yielding from 20 to 25 cents per pan. This cement would pay fairly without crushing, but as it is easily crushed, and two Chinese drifters have been able to keep five stamps at work, it must, if it holds out, pay enormously.

The editor had visited the Dewey claim at Bath (or Sarahsville). The main tunnel is 2,000 ft. long, and is so straight that one standing at the back end can see the mouth. The "pay dirt" is a streak of cemented gravel about 3 to 3½ ft. in thickness, which is about 100 ft. above the bedrock. It pays \$5.50 per ton. The claim has been prospected throughout a length of \$2,000 ft., and a breadth of 200 ft. During the past year, the aggregate receipts were a trifle over \$105,000, and the aggregate expenses a little less than \$65,000, leaving \$40,000 to be divided between the four shareholders, and a safe surplus in the treasury. The price paid for the claim by the present owners was \$11,000 each. Their names are as follows: Thomas Rea, Judson Wheeler, W. A. Freeman and A. Brece, the latter having been one of the old company.

From the *Dutch Flat Enquirer* of March 30th: At Dutch Flat and Gold Run, within a circle of a radius of a mile and a half, there are about 45 hydraulic claims now worked. The daily product is not far from \$5,000.

Colfax letter to same, says that Walker & Co's ditch is completed.

## Plumas County.

From the *National* of March 23d: We learn that the Crescent company cleaned up, last week, after a nine days' run, twice as much as at any former time.

Dutch Hill is now about as lively a camp as there is in the county. Zearing has

cleared about \$5,000 on the old Cumming's claims since last July. The old Dutch Hill company have done well the past year. Meehling & Co., Bowers & Co., Stanley, Benham & Co., Underwood, Bryan & Co., have all struck good prospects within the last three weeks, obtaining as much as two ozs. to the sack. Brewster & Co. have a large amount of very rich pay dirt thrown up at Red Rock, and expect to make a big clean-up.

Rich diggings are being found on the high benches above the river, at Cariboo, on the North Fork. Morris & Co. have commenced working the river bed. Ferguson, Tripp & Co. are doing well in the hill. The snow is all gone on the river about Cariboo Junction. Tom Orton's claim is paying \$10 to \$40 per day to the hand. E. R. Drake's claim, for six days work, paid \$160 for one hand. Lynn & Cook have been making big wages, getting \$900 out of one small crevice.

## Siskiyou County.

From the *Yreka Union* of March 23d: The winter just passed has been an unusually favorable one for ground sluicing, there having been a large amount of water and not much severe freezing weather. The miners on Humbug, Deadwood and Indian creeks, will be able to wash later in the fall than usual; at Oro Fino and Mugginsville, probably a month or six weeks longer than in previous seasons. Such localities as Greenhorn, Yreka Flats, Hawkinsville, Cottonwood, Hungry Creek, etc., usually short of water during the later months, will hail with satisfaction a more ample supply of the indispensable element. Altogether, therefore, we regard the prospects for a good mining season the coming summer as peculiarly flattering.

## Sacramento County.

From the *Folsom Telegraph* of March 30th: On Saturday last, Geo. Hamilton and partner, who have been prospecting at Alder Creek and vicinity, sunk a shaft on a bench of land about half a mile south of Alder Creek Station. At the depth of 11 ft. from the surface they struck gravel which prospected from 15 to 50 cents to the pan; the news of the discovery soon spread around, and miners hurried from every direction. At this time at least 2½ miles of ground has been staked off, upon which about 100 shafts are now being sunk. The discoveries extend to Buffalo Creek, and embrace a district about three miles in extent, running south and east, the entire adjoining lands in both directions never having been prospected, and the field is open to all. On the Natoma Water and Mining company's land no rent is charged, and miners are invited to prospect and work their discoveries; all the company ask is to sell their water, of which they have an ample supply.

We are informed that new and extensive diggings have been discovered in the vicinity of Mississippi Bar, on the San Juan Grant, two miles from Folsom.

## Yuba County.

From the *Marystown Appeal* of March 31st: A miner named Swett, one day last week, discovered a new quartz lode which promises, by prospects, to be rich, above Frenchtown, near Evans' ranch. Several parties have located on the ledge.

Same of April 2d: Mathew Smith and others have recently begun work on a ledge about one mile this side of Timbuctoo, on Filmore Hill. This ledge was taken up about a week ago and it promises to be of great value.

## COLORADO.

From the *Times* of March 5th: Wm. J. Barker, on No. 5 east, Dorchester lode, in Russell district, is now about 75 feet deep. An assay gave \$46.40 per ton. The crevice is over four feet wide, with 16 inches of solid iron.

The King company own three and four east, and have a shaft 60 ft. deep. The Discovery, and Nos. one and two east, are owned by Kuhster & Cave, who have a shaft 80 ft. deep, with a splendid crevice of iron.

Einchar & Co. are working the Colorado Exchange lode, a short distance west of the Dorchester, and have a fine show of iron.

Yesterday the Gunnell company shipped 181 ozs. of gold, this last week's run. The Alps company shipped 105 ozs., all of which was gotten out of the week's run, with only a 12-stamp mill, in Leavenworth Gulch. The Black Hawk company's run for the week was 194 ozs.; the Smith & Parmelee, 82 ozs.; and the Kimber mill 57 ozs.

Both the Keith and Dubois mills are running—the former on ore from the Bates lode, and the latter from the Bohall.

Messrs. Hinds & Shumer have resumed crushing ore from the Adeline lode, Central City Dist. They have been timbering up for some time past. The last run from six cords of dirt mixed with quartz, yielded 57 ozs. and 13 dwts.... Capt. Pritchard is down 130 ft. on the Whalen, and said to be



getting out rich ore. . . . An assay from average ore at a depth of 11 ft. on the Joe Johnson lode, Clear Creek county, gave \$118.15, gold, and \$49.73, silver, per ton.

A. C. Bennett has "struck it" in the Portage lode. Specimens of the quartz from a depth of 18 ft. showed beautiful wire gold running through it. . . . No. 2, Gregory, having broken their pump, will be delayed for a week.

#### IDAHO.

From the *Owyhee Avalanche* of March 23d: We have it from parties whose correspondence enables them to speak knowingly, that the sum of \$20,000 has been raised to develop the extension of the Poorman, sold this winter in New York.

In the Vulcan the tunnel is advancing, and the ore changing. It is believed to be rich, and is two ft. thick.

L. J. Lewis, of the Cosmos company, has purchased all the interest of John McMahon in the Silver Cord mine, together with his surface property. The amount of ledge purchased was 234 ft., 30 ft. of which will yield near \$1,000 per ton. Mr. L. will work it this summer. The richest ore will be shipped to New York. The belt of golden ore has widened to four ft. within two weeks.

A quartz mill will be put up this summer at the head of Blue Gulch. It will be supplied with ore from the Oneonta ledge, which tests from \$45 to \$300 per ton.

A Grantsville (Lemhi) correspondent of the *Montana Post* writes thus: Messrs. Smith, Prince & Co., who have been prospecting some time below the Idaho Dist., have struck a new gulch, which they have named Mackinaw Gulch and Prince's Dist. They report from 18 inches to two ft. of black muck on top, with colors all through it, and six ft. of gravel, with from one to three cents to the pan from top to bottom.

R. B. Royer and others have procured a lease of the New York ledge—just west of the Oro Fino—and are at work on it. They intend supplying the Webfoot mill with ore from it, as soon as winter ceases. The ore of this ledge is said to pay an average of over \$40 per ton.

An assay of ore from the Leviathan ledge, in Flint, gave at the rate of \$1,049.34 per ton in silver, with only a trace of gold.

The Rattler is the name of a new four-ft. ledge discovered in Flint Dist. Free gold is visible in the rock.

Rocky Bar correspondent of *Statesman* says: Mr. Joe Daly sold his 200 ft. on the Atlanta to F. M. Clark for \$10,000. Mr. Clark is in the East and will return soon, and it is stated that he has two mills purchased for the Yuba country. Yesterday, the 11th, Mr. Lee Mothershead brought for the Monarch Gold and Silver Mining company, of Indianapolis, Indiana, 200 ft., undivided of 800 ft., being the second east extension on the Atlanta, and paid Mr. J. M. Downing and C. Simmons therefor \$20,000 in greenbacks. The Atlanta is from 10 to 40 ft. wide, and the whole of the quartz will pay; the very poorest will pay over \$30 per ton. There is a streak from eight to fifteen inches wide that is equally as rich as the Poorman. Recently 200 lbs., after having been crushed in a hand-mortar, and put through a Varney pan, yielded 32 ozs. of bullion, worth \$4 per ounce. Remember that the Atlanta crops out, and has been found for more than a mile.

From the *Leviston Journal* of March 22d: Hunt, express messenger, arrived on Tuesday. He reports all business locked up at Warren's by the frost and snow, and the miners in camp mostly spend their time in their cabins. The snow averages about seven ft. in depth in Warren's Basin, and from that depth to 15 ft. on the mountains.

The work on the Lidell & Hapster tunnel is suspended, owing to some misunderstanding between the contractors and the superintendent.

The cold has interrupted, to some extent, the work on the ditches and flumes along the Salmon river, though the work is progressing. Mining for the two weeks past on the river has been somewhat checked by the cold, though never has been entirely suspended.

#### MONTANA.

From the *Post* of March 16th: The Hawkeye (Postlewaite's) mill, cleaned up on the 10th instant, from 5½ days run, 345 ozs. of retort; value, \$6,208.25, coin. . . . We saw the other day some splendid specimens from the Lucas lode, in Alder Gulch.

Letter to same from Jefferson City, March 9th, says: The Argentine and Axe lodes continue to sustain their reputation. The Gregory lode is every day giving more and more satisfactory evidence of its wealth. The shaft is now 130 ft. in depth, the crevice 11 ft. wide; all the ore has been saved, and already there is mineral enough excavated to occupy a mill several months.

Letter from Beaver Town: The old cop-

per mine is not played out yet. O. W. Carpenter has commenced work upon it. . . . The Casket lode has a five-ft. crevice at the depth of 16 ft. A tunnel is being driven into the hill to strike it.

Letter from Summit: Two or three companies are at work upon the Oro Cache, and taking out good ore. The Excelsior company are about starting their tunnel for the John How lode.

The Scranton mill is not running at present. There is not much doing in the gulch. The Harris Bros. have run their tunnel into Eagle Hill 375 ft. The greater portion has paid well. Layton & Wildman's tunnel is in 50 ft., and not through the rim rock. T. L. Miles & Co. have got into pay dirt, and are taking it out, but not washing it. It prospects well.

Boardman's tunnel, running from claim No. 17, on the Kearsarge lode, is 17 ft. in. A. A. Nasler & Co. are in 196 ft., after the Butler lode. The Lucas company are taking out some excellent ore.

Letter from Red Mountain, Highland District: Mansfield works four men, and averages \$700 per day. On the Balaratt Quartz discovery, a tunnel 160 ft. in length has tapped the ledge at a depth of 45 ft. The ledge is 28 ft. in width, and prospects splendidly in free gold. Three arastras will be completed by the 1st of May. On the Golconda discovery, a tunnel 100 ft. in length has been run.

Wind River is, after all, to be again prospected this summer. A portion of the Standifer party found five cents to the pan of gravel, but afterwards got lost in trying to rejoin the main body, finally reaching Fort Smith.

From the *Helena Gazette* of March 9th: The Alabama lode, at the head of "Big Indian," five miles from this city, has a shaft 90 ft. deep, and a well defined nine-ft. crevice. Some fine specimens of the rock are now to be seen in town.

#### OREGON.

From the *Jacksonville Sentinel* of March 16th: Late reports from Eastern Oregon give information that rich gold mines have been discovered some 70 or 80 miles south of Auburn, Baker county. It is said that as high as \$50 a day to the hand has been obtained. This is confirming the long talked of report of rich gold mines being discovered by the immigrant who came to Oregon on the "Meek Cut off," in 1848.

#### NEVADA.

From the *Virginia Tresspass* of March 26th: This morning, Billy Sterman arrived direct from Black Rock. He brought with him a four-mule team laden with ore, which we presume is to be reduced at the Ophir mill, and assays from which show silver to be contained therein as much as \$2,650 per ton. The supply of ore seems to be inexhaustible, and a number of mills are to be erected there this season.

From the *Aurora Union* of March 23d: Mr. C. Arnold struck a very rich vein of quartz on Last Chance Hill several days since. The ledge was claimed as a portion of the Wido West mine, although we believe the difficulty has been settled.

Letter from Wilson's Dist. to the *Times* of March 13th: The Wilson ledge varies in width from six to eight feet on the surface, and has been found rich in free gold a distance of more than a mile. A crushing of the rock taken from the surface, worked by simple pan process, yielded \$40 to the ton, and there are thousands of tons accessible. A tunnel some 300 ft. long is now being run for this ledge, which will soon be completed.

The Wheeler, a continuation on the opposite side of the cañon, is the second ledge located. A great number of claims have been taken up. A lot of rock recently worked at Dayton yielded at the rate of \$109 to the ton.

The Mountain View is larger than either, being from 40 to 60 ft. wide, and traceable for several miles. It yields from \$30 to \$40 per ton at the mills, and the companies having ore on the surface are offered \$20 per ton for it at the dump.

#### Humboldt.

From the *Register* of the 23d: The "Fifty-six" mine, on the Humboldt river, at Lassen's Meadows, was discovered in 1856, and claimed by the discoverer and his party after the Washoe excitement in '59 commenced. It has remained, however, undeveloped, until last fall, when a company bought it up entire, and commenced work in earnest. They have now a very large, well-defined lode, and are piling up the ore at the mouth of their tunnel by the ton. Its proximity to the railroad and the river, and its desirable location otherwise, together with its large size and rich quality of ore, makes it a valuable property.

#### Pahrnagat.

The following is from a private letter received at Salt Lake, from Logan Springs, March 4th: Everything is looking up. The lodes which are being worked upon all look well. The weather is splendid. Mr. Raymond's 10-stamp mill is now at Hicko; Conger's mill is at Logan. Bidwell's mill will be built at Hatfield's Ranch; there is plenty of water there now. About 100 tons of very rich ore has been taken out of the List lode, and it continues to look well.

#### Reese River.

From the *Reveille* of March 22d: Three bars of bullion, valued at \$2,774.60, from the mill of the Twin River Co. came in yesterday.

Same of 23d: Ore for reduction is coming in from Reveille Dist. Six tons, from 13 locations by Brobant, Kellogg and Henry, is on the way.

Mr. John Frost, of the Manhattan Co., is developing its North Star mine handsomely. In the level to the west the vein has assumed extraordinary proportions. They do not select the ore, but work the entire mass. Assays of the pulp yield, we are told, over \$300 per ton.

Same of 25th: We were yesterday shown a letter from Milk Springs Dist. The Bismarck ledge was particularly mentioned as showing handsome ore a few feet below the surface. They are taking ore out of several ledges which is to be brought here for reduction.

We learn from Smoky Valley Dist., that the Commercial Co's tunnel is now about 400 ft. long, and it is calculated that the ledge will be cut in another 100 ft.

In Palmetto Dist., 30 miles south from Silver Peak, the ore from the bottom of the Kentucky shaft assays from \$700 to \$800; and it is estimated that the whole 7-ft. vein will work \$100 to the ton.

Same of 26th: The latest achievement of our mines is that of the little Timoke on Lander Hill. Its superintendent, W. F. Leon, sent to the Keystone mill for reduction 50½ tons of first-class ore, which yielded the sum of \$18,840.20 in silver bars between 850 and 900 fine. This was at the rate of \$373.15 per ton.

Same of 27th: Three bars, worth \$3,077, came in yesterday from the mill of the Twin River company. . . . The Knickerbocker mill, near Ione, sent in to-day for assay 3,237 ozs.

A letter from Reveille Dist., says the engine of the Rutland mill has been set in motion, and the result of the trial was satisfactory. The pans had reached Hot Creek, about 35 miles northwest of Reveille.

#### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of March 27th: The large shaft now being sunk by the Empire and Imperial companies at Gold Hill, has reached a depth of 835 ft. A considerable amount of water is coming in at the bottom of the shaft.

Same of 28th: There will undoubtedly be quite a rush this spring to the new mines at Silver Bond. Parties are already leaving this city for the land of promise almost daily.

Same of 30th: The Sierra Nevada mill will be started again in a day or two at farthest, with an engine of 100-horse power. The water in the shaft is 250 ft. deep; yet it is expected that the mine will be freed from it within three weeks.

Two assays from the O'Reilly lead gave \$26 and \$37 per ton.

From the *Tresspass* of March 26th: We learn that the Ophir company have cut their ledge at the 10th level, in the east drift, 75 ft. from the shaft.

Yesterday, at one o'clock, the members of the Miners' Union, to the number of 500, went to the Empire mine in a body, and demanded that all men at work for less than \$4 per day be discharged, or their wages raised to the standard price. The demand was complied with.

Same of 28th: We observed, yesterday, that the Chollar-Potosi company had a force of men at work on A street, filling up the old Potosi mine, with waste rock from the Chollar croppings, in order to keep the mine from settling, and make it safe for the miners at work below.

Same of 30th: The following is a statement of the amount of bullion shipped during the past week: From the office of Wells, Fargo & Co., in this city, there were shipped 3,605 lbs. of assayed bullion, valued at \$103,436.18; from their office in Gold Hill, 2,249 lbs., valued at \$91,232.96.

The *Gold Hill News* of March 28th says: A company of ten hardy prospectors left Gold Hill to-day for the Goose Creek mountains, high up the Humboldt river, to hunt gold or silver ledges. They go well provided with provisions and ammunition, and each man has a Henry repeating rifle.

#### California Petroleum.

At the meeting of the California Academy of Natural Sciences, held on Monday evening, April 1st, an interesting paper was read by the Secretary, entitled:

"On Naphtha and Illuminating Oil from Heavy California Tar (Maltha); and on the Probable Origin of Petroleum."

By PROF. B. SILLIMAN.

In this paper the author gives the results of certain experiments, recently made under his direction upon heavy "surface oil" from Santa Barbara county, with a view "to prove whether or not illuminating oil of good quality could be obtained from the distillation of so dense a body." He states that "the crude oil was very dark, almost black, transmitting yellow brown light in thin films. At ordinary temperature (60° F.) it is a thick, viscid liquid, resembling coal tar, but with only a very slight odor. Its density at 60° F. is 0.980, or 13° Baumé. It retains, mechanically entangled, a considerable quantity of water, which is neutral in its reaction."

From this substance he obtained, by fractional distillation, naphtha, and a series of light and heavy oils, varying in specific gravity from 760 to 918 at 60 degrees F.

The light, or illuminating oil, from two of these experiments, "after treatment with sulphuric acid and soda in the usual manner, acquired an agreeable odor, a light straw yellow color, and burned as well in a lamp as good commercial oil."

With respect to the heavier oils, he says: "No paraffine could be detected by refrigerating the heavy oils obtained in these distillations in a mixture of salt and ice. It is no doubt the absence of this body from the series of products obtained from the California oils generally, that accounts for the illuminating oil burning well at a density considerably below the commercial standard for oil obtained from Pennsylvania petroleum—a difference enhanced also by the absence of any considerable quantity of light naphtha. The lubricating oils of this series, likewise free from paraffine, retain on this account their fluidity at low temperatures."

He adds: "The light oils obtained in this series of experiments correspond respectively to 12.96, 14.56 and 18.96 per centum of the crude oil. The total commercial products are about sixty per cent. of the crude body, which also yields sufficient coke to supply the fuel required in the distillations."

Upon another important, and heretofore disputed point respecting the character of the California oils, he speaks as follows:

"It is evident from these experiments that heavy hydro-carbon oils, containing no naphtha, are convertible into oils of the naphtha series under the action of heat by molecular transformations, the excess of carbon being left behind as coke; each successive distillation eliminating a new but always a diminished portion of carbon. It may therefore be confidently affirmed that even the heaviest of the California hydro-carbons belong to and are derivatives from the petroleum series. The transformation of light oils into denser products ending with tar, like that which is the subject of this research, results not, as has been assumed by some, from the addition of oxygen producing an oxidized body; but, on the contrary, by the removal of successive atoms of hydrogen in the form of water, thus leaving the carbon in excess; that excess being left behind in the form of coke when the crude product is distilled."

On the question of the commercial value of the California petroleum, he speaks of the immense supply of oil from Pennsylvania as having "so far exceeded the demand of the markets of the world during the past year, that the price of the crude product does not return the cost of its production"—i. e. in Pennsylvania. He suggests, however, the probability of the California hydro-carbons possessing a value in their crude state as a fuel, a probability which is rendered stronger by the present low price of petroleum, as well as by the excess of carbon contained in these heavier hydro-carbons, and by the comparative scarcity of good fuel in California.

The paper closes with an exhibition of certain recent theories and experiments, by Daubrée and Berthelot, distinguished French chemists, the object of which is to show that the combinations of carbon and hydrogen, which form the different series of hydro-carbons known to chemists, may be effected without the aid of either vegetable or animal life—i. e. in a purely mineral way; and the fact is noted that the experiments here described, taken in connection with those of Berthelot and Daubrée, show the possibility of the derivation of the entire series of hydro-carbons from the single radical acetylene.

The paper was accompanied by samples of the oils, which were deposited in the museum of the Academy.



## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 11th, 1866.

**Mr. L. W. Felton**, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1865.  
**Mr. E. L. Smith**, is duly authorized Agent for this paper, February 25, 1867.

**Mr. Geo. P. Fitts** is a duly authorized agent for the Mining and Scientific Press, March 23, 1867.  
**Mr. J. M. Quay** will act as agent for the Mining and Scientific Press from this date, March 23, 1867.

## San Francisco:

Saturday Morning, April 6, 1867.

## Notices to Correspondents.

**AN OLD QUARTZ MINER**, of Averill, Nev., in the course of a very complimentary letter, alludes to the notice in this journal of the experiments made in the Chile mills, in our publication of the 16th ultimo, and justly observes that to make such reports entirely satisfactory, it would be well for those making them to state the value per ounce of the amalgam obtained from each mill, with the amount and value of the amalgam from the battery, rifles and copper plates. He further adds: "That some combinations of argentiferous ore, under excessive or continued trituration, while it will afford largely of amalgam, may be of such a very inferior quality, as to be of no great advantage, after all." Our correspondent also states that many experiments made by himself and others, in early times, produced in amalgam, results quite as astonishing as those reported; but when figured in dollars and cents, was not very advantageous.

**MILLER**.—You are right about the dangerous nature of the use of lead for mending mill-stones, or filling up cavities in their faces. The terrible calamity recently visited upon a whole neighborhood in the State of New York, in consequence of such a practice, should serve as a warning never to use lead in any such case. A good substitute is melted brimstone, mixed with sand. Pour the mixture into the cavities while hot, and it will be found to "set" very firm and be sufficiently hard as to answer quite as good purpose as lead, without any of the evils resulting from the use of that metal. Although not embraced in your query, you will find an excellent hint, with regard to the "ventilation of mill-stones," in our last week's issue.

**FARMER**.—The idea of accumulating power by windmills has recently been quite fully discussed by the Farmer's Club connected with the American Institute of New York. There is no doubt that power can be thus accumulated on the principle of clock-work. But it is necessary, especially here in California, where we can almost always depend upon regular winds day after day? A good windmill can be advantageously used on almost any farm of any considerable size, for various purposes, besides pumping—such as turning grindstones, driving churns or washing machines, turning lathes, etc. If power is to be accumulated, the best way would probably be to accomplish it by raising water into an elevated reservoir. The idea is not new. It has been in use at the East for fully fifty years.

**H. C.**—Green logs, when used for water-pipes, will sometimes clog up without the admission of any foreign substance; but not often. Small pine trees, which are cut down and bored and put underground immediately, sometimes get filled up with gelatinous, semi-transparent matter, similar in appearance to the "mother" of vinegar. The substance arises from an exudation from the wood. A prevention would be to season the logs a little before putting them under ground; or, as that might check them and cause them to leak, when put under pressure, draw a hot iron, or send a light blaze through the bore, which will have the same effect as seasoning.

## J. Ross Browne's Report.

Through the unpardonable negligence of somebody, only three or four copies of the report of Mr. Browne, upon the mineral resources of the States and Territories west of the Rocky Mountains, have yet found their way to this coast, although they should have been received here a month or six weeks ago. Even the Commissioner himself has, or had not a few days since, received a copy. The one before us having been received by Professor Silliman, has been kindly loaned for perusal. It comprises a volume of 321 pages, presenting quite a comprehensive and suggestive account of the mines and mineral resources of the Pacific slope. That it is complete or without errors cannot be expected, when the reader bears in mind the limit of time allowed, and the lack of the facilities within the reach of the Commissioner for its preparation. That fully as much has been accomplished as could reasonably have been expected, must be apparent to every intelligent person who examines it. It has evidently attracted much and quite favorable attention at the East—so much so, that the extraordinary number of 100,000 copies has been ordered printed, and a new appropriation of \$15,000 made for a continuance of the work another year. The report, as a whole, presents the fullest, most complete and most reliable account of the past history, present condition and future prospects of our mines and mineral resources any where attainable—no other comprehensive effort of the kind, in fact, having ever been made. Of course, the Commissioner has been unable to collect in person but a small amount of the facts which he has spread before the public; but he has employed about the best assistance within his reach—albeit that aid has in some instances not been rendered with that care and correctness which is desirable, or which, perhaps, might have been expected. A future report, aided in its production by additional experience, and by a more general and careful comparison of facts and opinions, will, doubtless, correct the few errors of the present production, and greatly increase the value and correctness of its successor. We shall endeavor, in future numbers, to give our readers the benefit of such information within the report as may be of special value to them, and point out such errors as it would be well to have corrected. For the present we can merely give a brief enumeration of the various topics taken up in the order of their occurrence:

Section 1st contains a historical sketch of the discovery of gold and silver at different towns and places on the Pacific slope.

Sec. 2d is devoted to a brief description of the geological and mineralogical features of California. This section was chiefly prepared by Mr. Ashburner of the Geological Survey.

Sec. 3d and 4th give a topographical sketch of Nevada, its prominent mineral characteristics and resources, with statistics of its past mineral yield, processes, cost of working, etc.

Sec. 5th is devoted to the discovery and progressive development of the copper interest of the Pacific coast. This subject is quite freely treated, and furnishes the only general paper of any considerable value which has ever been published on this important branch of California industry. It was prepared by Mr. H. C. Beuett of this city.

Sec. 6th is devoted to the quicksilver mines and their statistics.

Sec. 7th gives the history of the discovery and process of working our borax and sulphur deposits; concluding with a brief account of the tin mines of Temescal.

Sec. 8th is devoted to the population, main divisions, altitudes, climate, timber, and other general resources of the mining regions.

Sec. 9th consists of Prof. W. P. Blake's annotated catalogue of minerals found west of the Rocky Mountains.

Sec. 10th and 11th are devoted to the local mining customs, laws, difficulties and benefits therefrom, etc.

Sec. 12th contains a list of the most important works published in reference to the geology, mineralogy, and metallurgy of the

Pacific coast, and comprises a most valuable chapter for reference.

Sec. 13th is devoted to a further consideration of the population and agricultural resources of the mining region, with tables of distances; Edmund Randolph's address before the Pioneer association of this city on the history of California, and J. W. Dwinelle's address on the acquisition of California, etc., delivered before the Pioneers.

## California Railroad Constructor.

We have several times alluded, at considerable length, to the important California invention of W. D. Robertson, of a mechanical device for simplifying and facilitating the laying of railroad tracks, after the road has been graded. Mr. Robertson has greatly modified the machine, from the model which we described in our issue of November 10th, 1866. He has laid aside the wheel by which he then placed the timbers in position, and made several other important changes, which further reflection has suggested.

The machine which has now been constructed, and which may be seen near the San José Railroad depot, consists of a heavy frame structure, sixty feet long by ten feet high, and ten feet wide, with trusses, struts and tie-rods, giving it very much the appearance at a distance of an ordinary railroad bridge.

The framework overhangs the forward wheels about one-third of its length, in order to allow the work of track laying to progress in advance of the wheels, which, of course, advance only as fast as the track is laid. The proper balance is secured by placing the heavy machinery near the rear. In front of the machine is a scraper which smooths down any trifling inequality which may have been left by the graders. As fast as the ground is prepared the ties are pre-seuted, laid down in place, firmly bedded and made ready for the iron rails, which are brought forward in pairs from the rear, one on each side, and readily swung into place from the forward overhanging part of the machine. The chains are placed upon the rail ends as they are being brought forward. The spikes in the present machine are driven by hand, after the machine has passed on, although even that may be done by machinery. The machine moves regularly on as the work progresses.

At the commencement of work, the rear portion of the machine is loaded with ties and rails, which are supplied and replaced from freight trains which follow the machine as fast as the work progresses. The ties are carried to their place by two endless chains which revolve with the progress of the machine. Small spikes are attached to these chains at intervals corresponding to the distances which it is desirable should be left between the ties. The ties are merely thrown upon these spikes, and carried forward over the heads of the workmen and are regularly deposited upon the grade as fast as the work progresses. The machine readily adjusts itself to up and down grades or to curvatures, down to a radius of 200 feet.

It is estimated from experiments already made with this machine, that with a 10-horse power engine to drive it, it will be able to lay from one-fifth to one-quarter of a mile per hour with sixteen or eighteen men. It is capable of being run night and day, wet or dry, as the men may be constantly under cover. It is the opinion of the inventor, that with three shifts of men he can with this machine do six times as much work as three times the same number of men can do without its aid.

The experimental trials thus far appear to have fully established the success of the machine. Some of our heaviest capitalists have taken an interest in the same, who are determined to see that it has a fair trial. This is as it should be, and speaks well for the enterprise and patronizing spirit of our moneyed men, some of whom are ever ready to lend a helping hand to genius, especially when directed to the development of the mechanical interests of our growing Pacific Empire.

## MECHANICS' INSTITUTE—SUTRO TUNNEL.

The Special Committee, consisting of Messrs. Wm. J. Lewis, Arch. Cooper and P. M. Randall, appointed to investigate the subject of the Suto Tunnel project, made their report, at the regular meeting, held on the evening of the fourth inst. The report closed with the following resolutions:

1st. That the Comstock lode is a vein of extraordinary value, presenting every feature of permanency and continuance in depth much further than mining work can ever be carried.

2d. That experience in all mining countries shows conclusively that the difficulties in drainage and ventilation limit the depth to which mines can be worked, and whenever attempts have been made to work them below this limit, without the aid of adits or tunnels, the result has been disastrous to the owners.

3d. That the proposed tunnel will, by affording good ventilation, diminish the temperature and greatly improve the sanitary condition of the miners.

4th. That the Comstock lode must have a drain tunnel, or the mines must be eventually abandoned.

5th. That the proposed Suto Tunnel is a work entirely feasible, and offers no unusual mechanical difficulties whatever, and we believe it can be constructed, with proper energy, judicious management, and sufficiency of capital, in from three and a half to four years, at a cost of about \$2,500,000. But if the cost should, by any contingency, reach even \$10,000,000, necessity demands its construction.

6th. That the rights granted the Tunnel Company, the contracts made with the mining companies, and the chances of discovering valuable mines, must make this enterprise one of the most promising undertakings ever projected on this coast, and one offering extraordinary inducements for the investment of capital.

7th. That by means of this tunnel a permanence and importance will be given to the mines on the Comstock lode which can hardly be realized now; that the produce of bullion from the mines may be doubled, and even tripled, exercising a most beneficial influence upon the commerce, the industry and resources of San Francisco.

8th. That every citizen of California and this coast at large, who has the future welfare of the Pacific States at heart, should lend a helping hand and encourage in every way and manner the execution of this great work.

9th. That, recognizing the influence which the production of the precious metals has upon the general welfare of the nation in increasing its taxable property, and consequently its revenue, we respectfully solicit Congress to give liberal aid to the work in such manner as in their wisdom they may deem proper.

10th. That we fully recognize the foresight of A. Suto, Esq., in projecting this great work, and highly appreciate the intelligent manner in which he has presented to the public the importance and necessity of this enterprise.

The report was an elaborate and valuable paper. It was unanimously adopted. We hope it will be published, as has been proposed.

**MACHINERY FOR MONTANA.**—The Miners' Foundry is building six Wheeler pans for this distant territory, which is another evidence that the mining machinery manufactured here is beginning to be more and more appreciated abroad, and if we may judge from inquiries from that quarter, in regard to the cost, character and capacity of our mills and machinery, as compared with the Eastern manufacture, they are waking up to some extent to their true interests. Chicago has a little advantage of us in point of cheapness of transportation, perhaps some as to material, and can deliver them a certain class of machinery at a less price; but for a first-class article that will accomplish the most work, with the least cost in a given time, the Eastern market cannot compete with this; at least such is the belief of some of our most skillful foundrymen. In this connection, we will state that the Miners' Foundry have just erected a new and large boiler shop, giving them increased facilities for the construction of boilers of all sizes, from the smallest stationary boiler to the largest ocean steamship.



(Reported for the Mining and Scientific Press.)

## California Academy of Natural Sciences.

## REGULAR MEETING.

MONDAY, April 1st, 1867.

Prof. W. P. Blake in the Chair.

Forty-nine members present.

J. D. Farwell, Samuel S. C. Swezey, Frederick Madge, D. J. Littlefield, Archibald Cooper, F. Berton, Bernard Marks and Samuel Pillsbury, were elected resident members.

Mr. Stearns reported an invitation from Maj. J. T. Hoyt for the Academy to visit Angel Island next Saturday. The invitation was accepted with thanks, and notice given for members to meet at the Society rooms on Saturday morning at 9 o'clock.

**Donations to Cabinet.**—Mr. Lorquin presented a case of butterflies from the Philippine, Molucca and Arrow Islands and Brazil.

Dr. Kellogg presented a specimen of the California snow plant, preserved in alcohol, and commented upon the laudanum odor the liquid had acquired.

Dr. Bolander stated that this curious plant is found in many shady places 6,000 or 8,000 feet above the sea, and is not confined to coniferous groves.

Prof. Blake said it was common high on the South Fork of the American, on the Placerville road to Virginia.

**CALIFORNIA PETROLEUM.**—Prof. Silliman read a paper on California petroleum, giving the results of recent analysis of heavy "surface oil" from Santa Barbara, a full digest of which is given in another column.

Mr. Stearns presented several original papers on Pacific conchology, prepared by Dr. Newcomb and himself, which went to the Publication Committee.

**MOUNT DIABLO AND WASHINGTON TERRITORY COAL.**—Prof. Blake presented an analysis of Mount Diablo coal, from the Pittsburg mine, showing the following components: Water, 3.28; bituminous substances, 47.05; fixed carbon, 44.90; ash, 4.71. The sample was apparently free from sulphur. It does not cake or make a compact mass of coke; and is therefore not an economical coal for gas production. It gives a long flame in burning, parts with its gas very rapidly and breaks up into small fragments, thus necessitating the use of grate bars with narrow openings.

Prof. Blake also read a note upon the brown coal formation of Washington Territory and Oregon. Openings recently made along the Cowlitz river have revealed several seams of brown coal from two to seven feet thick. The 7-foot seam is chiefly a very compact coal, having the appearance of canal or splint coal, burning freely, giving a bright flame and emitting a light smoke like that given from wood. It holds fire well and gives an intense heat under a draft or blast. Trials in quantity failed to show any caking qualities. A sample yielded about 50 per cent. of volatile matter, chiefly gas. The deposit appears to be formed in great part of trunks of exogenous trees. One trunk has been cut through that was over four feet in thickness. A part of this was compact coal, and another portion was in a half-silicified state. Lines of annual growth may be seen in some of the samples. This combustible partakes of the character of both coal and wood, and is in fact a highly condensed wood, carbonized, without the loss of its volatile portions. Fossil plants are found in abundance in the adjoining sandy beds. They are chiefly leaves of deciduous trees, but there are some very distinct impressions of palms. This is significant of a warmer climate. The same formation of brown coal appears to extend along the Columbia back of St. Helena, where it is in close proximity to beds of iron ore, and the coal may perhaps be used to great advantage in the production of that metal.

**ROYAL GEOGRAPHICAL SOCIETY.**—Dr. Gibbons read a letter from Sir Roderick Murchison, the distinguished President of the Royal Geographical Society of London, introducing J. B. Calbeck, who is on his way to Singapore in the interest of the Society, and who is also connected with the Peninsular and Oriental Steam Navigation Company. Mr. Calbeck made a few remarks expressive of his pleasure and surprise at meeting a society of so much interest and having such a broad scope of scientific work. He regretted that he must so soon leave this interesting and really great country, (he left on the Colorado,) and declared he should take pleasure in acquainting Sir Roderick Murchison with the cordial reception he had met, and should endeavor to promote reciprocity between the London Society and the California Academy.

**REMARKABLE SALT BEDS.**—Mr. Hanks read a paper describing a mountain of rock salt found near Muddy river, about 100 miles

from the Great Bend of the Colorado, in Arizona. It is about a mile wide, several miles long, and in places 400 feet high. The salt is entirely pure chloride of sodium. Contiguous to it are mines of silver, and it will be valuable for the chlorination of silver ores. Prof. Blake was reminded that the old Spanish maps have on them, in a locality near the one designated by Mr. Hanks, the name "Mountain of Salt," showing that the early Padres must have known of its existence. Prof. Silliman said that a hill of almost pure rock salt, more than a mile in area, on the western border of Louisiana, near Texas, was discovered during the rebellion and afforded the rebels supplies when it was supposed their sources were nearly all cut off. Prof. Blake stated that he had recently analyzed salt brine brought from near St. Helens, Oregon, which is remarkably free from magnesia. The salt is superior for dairy purposes.

## Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ores, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

Mr. ROBERT TREMBLE has placed upon our table several very fine specimens of silver ore, from a vein discovered by himself and partners, about one mile and a half north of the famous Poorman's vein, in Owyhee county, Idaho. The characteristics of this vein are so similar to that of the Poorman, and its position so directly in range, that there is the strongest presumption for the belief that it is an extension of that vein.

142—Is a very rich specimen of black sulphuret, and would probably assay near or quite sixty per cent. of silver.

143—Is chiefly red oxide of iron, carrying free gold, and yielding a good per cent. of silver.

144—Contains about fifty per cent. of silica, with gold and silver, oxide of iron, and colored with green carbonate of copper.

145—Similar to the above, with less silica and no copper.

146—Silica, evidently changed by heat; said to be a fair sample of the chief part of the quartz composing the mass of the vein. It is interspersed with sulphurets, carrying, probably, both gold and silver.

Attention was first led to the search of this vein by finding specimens of black sulphuret of silver, as was the case with the Comstock vein; although in that case the significance was not understood. The prospectors followed up their indications a considerable distance before they finally came upon the lode itself, on the 7th of September, 1865. Soon after they commenced work upon the vein proper, their operations were interfered with by a contesting party, and the development thereof has hitherto met with the usual delays encountered by nearly all promising discoveries, in the neighborhood of lazy prospectors and needy lawyers. Mr. Trimble and partners were winners in the suit which was commenced; but as an appeal was taken, there is still a prospect for more lawyers' fees ahead. It is the intention, however, of the present party to commence the active development of the mine early the ensuing spring.

**THE MANUFACTURE OF SHIRTS** is beginning to assume considerable importance in our midst. In addition to the California Shirt Manufactory, which commenced operations in 1865, at least two other large establishments, within the past few months, have been set on foot in the same line. The pioneer establishment passed into the hands of M. Esherg & Co., in January, 1867, and is now in successful operation at 511 Sacramento street, with from forty to sixty employees almost constantly engaged, and turning out not less than four hundred dozen shirts per month, including all the different varieties. Being made chiefly to order by measurement, they are represented as having a better fit and less liable to rip, in short, as being not only cheaper, but in every respect better than the imported, being put up from the best linen, flannel, or other material, to be found in the market.

**THE NEW MERCANTILE LIBRARY BUILDING.**—The corner stone of this edifice was laid at noon on Saturday, March 30th, under the auspices, and in accordance with the ceremonies of the Masonic Order, at the request of the Board of Directors of the Association. Accommodations were provided for invited guests, and a large number of spectators. Gov. Low, Mayor Coon, State, Municipal and Federal Officers, the Pioneers, two Chapters of the Royal Arch Masons, Officers of the Grand Lodge, and others, were present. The invited guests were escorted from the Occidental Hotel to the site of the building by a committee of the Association. The following was the order of exercises: Music; Prayer by the Grand Chaplain, Rev. Dr. Cox; Chant by 200 pupils of the Lincoln School; the presentation of a silver trowel to the Grand Master, by W. H. L. Barnes, President of the Association; the laying of the stone, with appropriate ceremonies; address by President Barnes; singing by the Lincoln School pupils, and Benediction by the Grand Chaplain. A box containing various articles, among which were specimens of the National coins and notes, copies of the city journals, etc., was placed in a cavity underneath the stone, and a list of its contents read by the Grand Sec'y. The occasion was a most interesting one, and the ceremonies most imposing.

The building will be an ornament to the city, and a credit to the Association. Its cost when completed, will, it is said, be nearly one hundred and fifty thousand dollars.

## Perry Davis' Vegetable Pain Killer.

As an internal remedy, has no equal. In cases of Cholera, Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night, by taking it internally, and bathing with it freely. It is the best liniment in America. Its action is like magic, when externally applied to bad sores, burns, scalds and sprains. For the sick headache and toothache, don't fail to try it. In short, it is a Pain Killer.

**PERRY DAVIS' PAIN KILLER.**—This medicine has become an article of commerce, a thing no medicine ever became before. Pain Killer is as much an item in every bale of goods sent to country merchants as tea, coffee, or sugar. This speaks volumes in its favor.—*Glen Falls Messenger.*

Sold by all Medicine Dealers everywhere. 14v14-1m

## Allen's Lung Balsam.

The following letter, from Dr. A. L. Seville, who has had many years experience in the medicine business, and with Lung Remedies, will give the afflicted still more assurance that the sure remedy is found at last; and the consumptive should lose no time in commencing the use of Allen's Lung Balsam:

*Gentle:*—I make the following statement from a perfect conviction and knowledge of the benefits of Allen's Lung Balsam, in curing the most deep-seated Pulmonary Consumption. I have witnessed its effects on the young and the old, and can truly say that it is by far the best expectorant remedy with which I am acquainted. For Coughs, and all the early stages of Lung Complaints, I believe it to be a certain cure, and if every family would keep it by them, ready to administer upon the first appearance of disease about the lungs, there would be very few cases of fatal consumption! It causes the phlegm and matter to raise, without irritating those delicate organs (the lungs) and without producing constipation of the bowels. It also gives strength to the system, stops the night-sweats, and cures all the morbid secretions to a healthy state.

Yours, respectfully, A. L. SEVILLE.  
Consumptives, do not despair, because all the remedies that you have tried have failed, but try this Great Remedy. Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.  
SOLD BY ALL MEDICINE DEALERS EVERYWHERE. 14v14-1m

## For Mines and Mills.

## LOCKE &amp; MONTAGUE,

HAVE A FULL STOCK OF

## Large Cooking Stoves,

Lamp Utensils,

Powder Cans,

Quicksilver Dippers,

Amalgam Kettles,

Ore Buckets,

Lanterns and Lamps,

Iron Pipe and Fittings, Hose and Couplings.

—ALSO—

Hansbrow's Patent Mill and Mining Pumps,

WARRANTED THE BEST!

All of which they offer at the lowest market rates.—  
112 and 114 Battery Street.  
14v14-1w

## Boy Wanted.

About fifteen or sixteen years of age, for errand and mailing clerk. Must write a good hand, and come well recommended. Address or apply at this office.

**Builders' Insurance Company—**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 10v14spqr

HUNTER'S  
Eureka Amalgamator!

**FOR WORKING THE SANDS AS THEY PASS FROM** the battery. The coarse particles of sand are reduced to pass through a No. 6 screen, then the sand passes through No. 5 in the battery; the fine flour gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The mangle is four feet eight inches square on the bottom, and covered with iron dies 12 inches thick by four inches wide, extending across the bottom with alternate strips of wood on end of the same width. The rollers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between rubbers. The box is also lined with copper plates. The machine is set in operation by connecting an oscillating motion; and the rubbers are suspended on iron hangers, and adjusted by set screws.

One-fourth of a horse-power is sufficient to run one machine of ten tons capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from W.M. WATT, Esq., of the Eureka Mill, will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is in our book that pays \$10 per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I have ever seen. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it; but the best recommendation I can give is that I want four more. Will you please go to the Vulcan Foundry and order them."

On the first of April I had an order for two more, for the Pittsburg Company at Nevada City.

The price for a Machine with rubbers made, and dies and wood set in the bottom, and all the iron complete, is \$275.

The weight is about one ton with cast iron box; but to save freight, the box can be made of boiler iron, saving 500 pounds weight.

Orders sent to the Vulcan Foundry, the Union Foundry, or the Fulton Foundry, first sent, will be promptly attended to.

ANDREW HUNTER, Patentee.

P. S.—Patent allowed.

HUNTER'S  
IMPROVED CONCENTRATOR.

**THE INVENTOR OF THE ABOVE RECENTLY IMPROVED** Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon, and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety percent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs. 14v14

## EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

## WOOD AND COAL,

No. 513 Bush street, between Dupont and Stockton,  
14v14 6m SAN FRANCISCO.

## PACIFIC

Rolling Mill and Forge Co.,  
SAN FRANCISCO, CAL.

Established for the Manufacture of

## RAILROAD AND OTHER IRON

## Every Variety of Shafting,

Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

## HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention.  
The highest price paid for Scrap Iron. 9v14m3p

## A. S. Hallidie &amp; Co.,

MANUFACTURERS OF

## FLAT &amp; ROUND WIRE ROPE.

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street, ..... Works—North Beach

**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-third the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

**Round Wire Rope.**—Iron or Steel, for Hoisting.

**Flat Wire Rope.**—For Derrick Fall Ropes—

**Soft Steel Wire Rope.**—For Derrick Fall Ropes—very strong and durable—only third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

**Galvanized or Ungalvanized Round Wire Rope.**—For Ships, Dredging, Derrick Cables, Ferry Ropes, and all standing purposes.

**Steel Ferry Ropes.**—For wide streams. Ferry Blocks supplied.

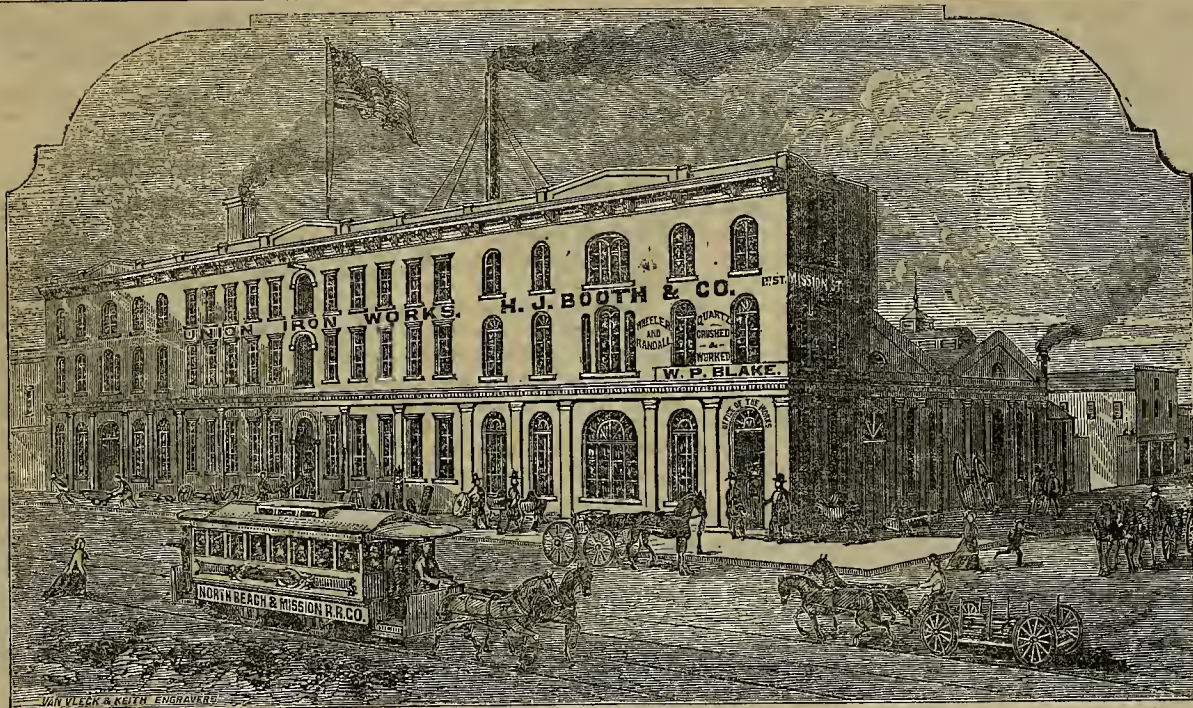
**Iron and Copper Wire Cord.**— $\frac{1}{2}$  to  $\frac{3}{4}$ -inch diameter, for hauling window sashes; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Cir. cunf.	W't pr 100 ft.	Cir. cunf.	W't pr 100 ft.	Cir. cunf.	W't pr 100 ft.	Size Link.	W't pr 100 ft.	Brk'g Str'n.	W'kg Load.
2	lbs. 63	1½	lbs. 33	5	lbs. 100	¾	lbs. 266	tons. 7	lbs. 2,300
2	83	2	55	6	130	1 1/8 3 1/2	341	11	3,700
							411	12	4,800

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 26v13-6m3p





Established in 1849—Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Works, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic Hay, Rag, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, Flue, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior Double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Fraters concentrators, Wakley's pans, Beers' pan, German Barrels, Amstra Oaring, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. BLAKE'S PATENT QUARTZ CRUSHERS, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness, and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

GEO. W. PRESCOTT.

IRVING M. SCOTT

H. J. BOOTH &amp; CO.

## Machinists and Foundries.

PALMER, KNOX & CO.,  
Golden State Iron Works,Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

## MACHINERY,

## STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

## Self-Adjusting Piston Packing.

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER &amp; RANDALL'S

## NEW GRINDER AND AMALGAMATOR

HEPBURN &amp; PETERSON'S

## AMALGAMATOR AND SEPARATOR,

## Tyler's Improved Water Wheel,

Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

KNOX'S AMALGAMATORS,

WITH PALMER'S PATENT STEAM CHEST, Superior for working either Gold or Silver Ores.

## Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10ny-1f

WILLAMETTE IRON WORKS,  
PORTLAND, OREGON.

## Steam Engines, Boilers,

## SAW AND CRIST MILLS,

MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-Front and E streets,  
18v13-ly One block north of Couch's Wharf.UNION IRON WORKS,  
Sacramento.

## WILLIAMS, ROOT &amp; NEILSON,

MANUFACTURERS OF

## CROSS' PATENT MILL FEEDER,

## STEAM ENGINES, BOILERS,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

## Danbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITYJOHN WRIGHT,  
Pick Manufacturer,No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining. Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 13v13-y

GEORGE T. PRACY,  
MACHINE WORKS,Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

## STEAM ENGINE, FLOUR AND SAW MILL

## And Quartz Machinery, Printing Presses,

—AND—

## MACHINERY OF EVERY DESCRIPTION MADE AND

REPAIRED.

Special attention paid to Repairing. 47-3

## SAN FRANCISCO

## Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

## Marine and Stationary Engines

Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

Wine, Cider, Cotton and Tobacco Presses of the latest Improved Patterns.

## STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

## Dunbar's Improved Self-Adjusting Piston

Packing, requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

## MACHINERY OF ALL DESCRIPTIONS

Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-ly DEVOS, DINSMORE &amp; CO

## GLOBE

## Foundry and Machine Shop,

STOCKTON, CAL.

## KEEP, BLAKE &amp; CO.,

MANUFACTURERS OF

## Quartz, Saw and Grist Mill Irons, Steam

Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons,

House Fronts, Iron Fencing, Balcony Railings, etc.,

at San Francisco prices. Orders solicited

13v13-ly and promptly executed.

LEWIS COFFEY. J. S. RISDON

## LEWIS COFFEY &amp; RISDON,

## Steam Boiler &amp; Sheet Iron Works.

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler

Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality.

Did Stand, corner of Bush and Market streets, opposite Driftal Hotel, San Francisco.

## CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds. Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Rells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 13v13-ly

V. KINOWELL. J. H. WEED.

J. O. HANSCOM & CO., { T. PENDERGAST,  
H. S. SMITH. { W. W. HANSCOM.

## Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

## Practical Machinists and Iron Founders,

MANUFACTURE

## STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

## SAW MILLS, FLOUR MILLS,

Danbar's Improved Self-Adjusting

## PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

## HANSCOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else.

## Wheeler &amp; Randall's New Grinder and

Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use.

Send for one of our circulars, giving full tables

All Wheels warranted to give the power as set forth, or the money will be refunded.

## Sole makers for this coast of the "Pendergast

White Iron Stamp Shoes and Dies.

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited. 13v12

## FULTON

## Foundry and Iron Works.

## HINCKLEY &amp; CO.,

MANUFACTURERS OF

## STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-47

## NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

## MARINE

## Locomotive,

And all kinds of

## HIGH PRESSURE

## Steam Boilers

MADE.

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil

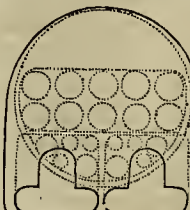
Stubs, Wrought Iron

Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired

D. CAMERON.



6v12-ly

RAIN FALL.—Tennent's gauge, in this city, shows the amount of rain-fall, during this season, up to April 1st, to be 30.15 inches. At Nevada City, Whartenby's gauge gives it at 72.75 inches—over six feet—more than double the fall at this point.

TOWNE & BACON,  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

## Miners' Foundry

—AND—

## MACHINE WORKS,

Nos. 245 to 255 FIRST STREET,

San Francisco.

HOWLAND, ANGELL & KING,  
PROPRIETORS,

## Manufacturers of Machinery for

QUARTZ MILLS. FLOUR MILLS,  
SAW MILLS, SUGAR MILLS,  
POWDER MILLS, PAPER MILLS,

## Steam Engines of all Kinds.

## Amalgamators of all Kinds.

MINING PUMPS, HOISTING WORKS,  
OIL WELL TOOLS, ROCK BREAKERS,

—AND—

Machinery and Castings of all kinds, either

of Iron or Brass.

Boilers and Sheet Iron Work in all its

Branches.

Shoes and Dies of White Iron, manufactured

for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russia Iron Screens, of any degree of fineness.

We are the only manufacturers on this coast of the "Hicks' Engine," the most compact, simple in construction, and durable, of any Engine in use.

W. H. HOWLAND, E. T. KING,  
H. B. ANGELL, CYRUS PALMER.

13v14-qr

## J. NEWSHAM. J. BIGWOOD.

## SOUTH BEACH IRON WORKS,

Near corner of King and Third streets, San Francisco.

## MARINE ENGINES,

AND ALL KINDS OF

## MACHINERY FORGING.

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to.

All work done warranted. 13v14-17

## CITY IRON WORKS COMPANY.

F. OLERC, B. KLEINCLAUS, W. DEBBIE.

## CLERC &amp; CO.,

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.

9v146m



## JAMES MACKEN,

## COPPERSMITH,

No. 226 Fremont st., bet. Howard &amp; Folsom

All kinds of COPPER WORK done to order in the best

manner. Particular attention paid to Steamboat, Sugar

House and Distillery work.

Repairing promptly and neatly attended to. 13v11

## JOHN LOCHHEAD'S

## Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT

to order—Marine, Stationary, or Locomotive.

## HOISTING AND PUMPING ENGINES,

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

## Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San

Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN

STEAM ENGINES.

Screw Propellers of all kinds, and Steam Boat Machinery

generally, made to order, and warranted to give perfect

satisfaction in every particular. 25v12-3m



**PETROLEUM PAINT.**—L. H. Tucker, of the *Country Gentleman*, in his notes on Long Island farming, thus alludes to a barn painted with petroleum:

On the farm of R. W. Titus, I examined a barn painted six years ago with petroleum (the heavy sort), mixed with Ohio mineral or earth-paint. It appeared not to have suffered in the slightest degree by weather and time, the coat being complete and unchanged. The barn is ninety feet long and thirty-two wide, with sixteen feet posts, the whole surface painted being about 4,000 square feet. The entire cost of the petroleum, the paint and of labor, was not over \$24. It would probably be one-third more at the present time. It is obviously a very cheap and perfect mode of coating wooden buildings, adapted even to handsome dwellings.

**DE PHOSPHORIZATION OF IRON.**—Mr. Warren De la Ruo (Edg.) has patented an invention which consists in the introduction of lead, metallic or oxide, into the converting vessel so as to be thoroughly diffused in the fluid metal, combining with the phosphorus in the iron, and the compound driven off by oxidation. Molten lead is introduced as soon as the blast has been turned into the converting vessel. Compounds are driven in with the blast, in the shape of powder.

A LARGE-oscillating rock is said to have been found in the wilderness of Western Arkansas. It is situated in the channel of a torrent, and moves to and fro, apparently from the action of the water. The motion produces a loud noise, which can be heard several miles—so the story runs.

#### To Owners of Copper Mines and Smelting Works.

A PERSON OF LARGE EXPERIENCE IN COPPER Smelting, both in the Atlantic States and California, wishes a situation as Superintendent of an establishment for smelting Copper. Address "W," care of Mining and Scientific Press. 5v14f

**B. F. HOWLAND,**  
PHOTOGRAPHER,  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Prints, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cards de Visites only \$25 per dozen; Vignettes at \$25 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

**J. S. PHILLIPS, O. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or Superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Reference—B. W. Moore, 525 Clay street, San Francisco. Humboldt City, Nevada. 6v14f

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
**E. D. WATERS & CO., Prop'rs.**  
E. D. WATERS, Sen. T. F. CROMBIE. J. H. CARMAN,  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.  
Terms, \$9 per Year, payable in advance.

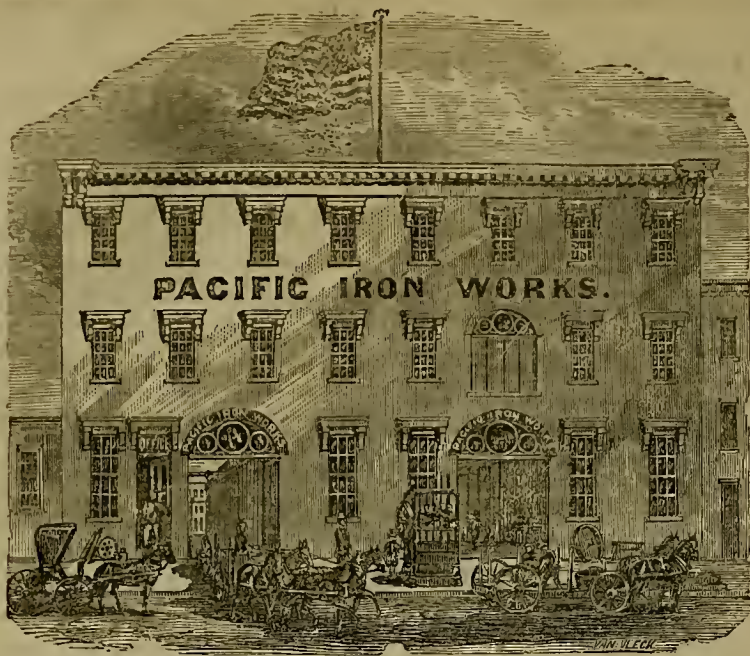
**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every  
STEAMER DAY.  
13v13f

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2.50 per day for Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House free of charge, and to any part of the city for 50 cents.  
2v12  
F. E. WEYCANT, Proprietor.



### THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern. Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call special attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Green Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

**GODDARD & COMPANY.**

#### PIONEER IRON SHUTTER WORKS!

Established 1849.

**C. NUTTING,**

Manufacturer of

Fire-Proof Doors and Shutters,

BANK VAULTS, PRISON CELLS, BALCONIES, Awn-

INGS, CRATINGS, IRON FENCE, STAIRS, Etc.,

123 Bush street,

San Francisco.

#### NEW YORK PRICES.

WATCH REPAIRING AT NEW YORK PRICES.

**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry.  
25v10-6m

WATCH REPAIRING AT NEW YORK PRICES.

#### Pacific File, Reaper and Mower Section MANUFACTORY,

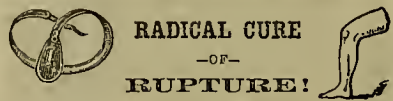
No. 53 Beale Street, Between Market and Mission, SAN FRANCISCO.

Files Recut and warranted as good as new, or no charge. The only establishment in the State. We also manufacture Reaper and Mower Sections.  
S. BENSON & CO., Prop'rs.  
12v14-8m

**THE WILLCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly. Come and see it, or send for Report of the trial.  
**SAMUEL SWIFT, Agent,**  
13v14-6m  
203 Kearny street, near Sutter.

#### PATENT BUSINESS.

We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent agency in New York City, and having a faithful and reliable associate in Washington City, we are now better than ever before prepared to secure the claims of our applicants. In a careful, prompt and efficient manner.  
DEWEY & CO.,  
San Francisco, Jan. 1867. Patent Solicitors.



#### RADICAL CURE

—OF—

#### RUPTURE!

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 624 Washington Street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

**DR. A. FOLLEAU**

Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
He has no connection with any Agency. 8v13-1y1p

#### MEUSSDORFFER,

Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE

On Saturday, February 9, 1867.

An Entirely New Style of

**Cloth Cashmere Hat**

"YACHT HENRIETTA,"

Which are the most dressy Hat ever introduced on the Pacific Coast.

Call and see them. 8v14

**ITALIAN MANUFACTORY**  
OF  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 Sansome St. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

#### Copartnership Notice.

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. McGUIRE, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m

#### Hazard's Powder.

**BLASTING AND SPORTING**  
**GUNPOWDER,**

SUPERIOR QUALITY.

Also, SAFETY FUSE OF ALL KINDS.

**EDWARD H. PARKER,**

Agent for the Hazard Powder Company, 221 California Street. 13v14f

#### San Francisco Glass Works

FACTORY,

Townsend street, between Third and Fourth.

THESE WORKS (WHICH HAVE BEEN TEMPORARILY stopped for repairs) are now in operation, and are prepared to fill orders for every description of

#### HOLLOW WARE GLASS,

All sizes of German Flint Prescription Vials, Fluted Prescriptions, Ovals, Extracts, Panels, Mugs, Soda, Packets, Wine Bottles, etc., etc. Chemists' Glass Ware, Receptacles, Flasks, Funnel, Syphons, Tubs, etc., etc. Lamp Chimneys of every size and description, equal in quality to the best imported.

Private Molds made and lettered to order at short notice.

**NEWMAN & BRANVAN,**  
Proprietors.

#### Baldness! Baldness!!

CAN BE PREVENTED, BY USING

#### Mayhew's Balsamic Hair Stimulant!

THIS REPARATION HAS BEEN USED AND RECOMMENDED by some of the most prominent members of the medical profession of this city.

For the removal of DANDRUFF, SCURF, for preventing the Hair from falling off, and for producing a new growth, IT IS WITHOUT A RIVAL.

For particulars and references, see circulars accompanying each bottle. Prepared by

**W. E. MAYHEW, Druggist,**

N. W. Corner Fourth and Howard streets San Francisco.

He gives his personal attention to the preparation of Physicians' prescriptions.

Also, has constantly on hand a choice assortment of French, English and American Toilet Articles. 13v13-6w

#### GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half they are required to pay at hotels. 17v13-6m SANBORN & CO.

#### Attention! Attention! Attention!

Look to Your Health in Time!

**HEALY'S CURATIVE OIL, FOR THE SURE AND speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age.**

Are you afflicted with Rheumatism? Use Healy's Curative Oil!  
Have you the Headache? Use Healy's Curative Oil!  
Have you a Sore Throat? Use Healy's Curative Oil!  
Have you the Toothache? Use Healy's Curative Oil!  
Are you subject to Cramps? Use Healy's Curative Oil!

And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. Kuno genuine analysis "H. J. L." is stamped on the cork, and the fac simile of FRANK HEALY'S signature on the outside wrapper of the bottle. Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drug Gists and Chemists. Price, \$1. 2v14-10p



#### STANDARD SOAP COMPANY'S WASHING POWDER,

THIS POWDER IS SUPERIOR TO ALL OTHER PREPARATIONS for washing and cleaning. It is made of pure material, and contains nothing that will injure the finest fabric. Equally as good for use in hard as soft water. One pound will make three gallons of beautiful soft soap. Put up in wrappers of 1-lb each, and in wooden boxes of 10-lb bulk. Ask your grocer for a package, and test its virtue. Manufactured at 204 Sacramento street San Francisco. 15v12-2q

#### Blanks, Blank Mining Books,

Constitution and By-Laws

—FOR—

#### Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the Mining and Scientific Press.  
Orders from the Interior faithfully attended to.

Favorable to Inventors.—Persons holding new inventions of machinery and important improvements, can have the same illustrated and explained in the Mining and Scientific Press, free of charge, if in our judgment the discovery is one of real merit, and of sufficient interest to our readers to warrant publication.





OF MILWAUKIE.

OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1897, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14v11f12p

## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.  
CAPITAL STOCK, - - - \$500,000

### Trustees:

H. P. WAKELEE, THOS. H. SELBY,  
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CHAS. E. McLANE.

H. P. WAKELEE.....MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office only for chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the advan-  
tages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14 3m

## Overland Route.

## THE PENINSULAR AND ORIENTAL

STEAM NAVIGATION COMPANY'S

### STEAMSHIPS

Leave Hongkong Twice a Month,  
(On the 1st and 15th in the Northeast Monsoon,  
and about the 11th and 29th in the  
Southwest Monsoon.)

—FOR—

SOUTHAMPTON AND MARSEILLES,  
VIA. EGYPT,

Calling at Singapore, Penang,  
Point de Galle, Aden, Suez, Alex-  
andria, Malta and Gibraltar.

From Point de Galle their steamers run to Madras,  
Calcutta, and Bombay, twice a month, and once a month  
to King George's Sound, Melbourne and Sydney.

From Hongkong their steamers run constantly to  
Swatow, Amoy, Foochow, Shanghai, and Yokohama.  
Hongkong, 1897. 13v14tf

## STOCK CERTIFICATES, STOCK TRANSFER JOURNALS, STOCK LEDGERS,

ASSESSMENT RECEIPTS,  
And all other Blanks, Blank Books, etc., required by Min-  
ing and other Corporations, kept on hand or printed to  
order on short notice, at moderate prices, at the office of  
the Mining and Scientific Press.

**Economy in Advertising.**—The MINING AND SCIENTIFIC PRESS is the best and most economical mining adver-  
tising medium in this city. Our terms are less than on a  
half the rates now charged by daily newspapers, and the  
mining community are beginning to appreciate our reason-  
able rates of advertising. The Press contains, proportionally,  
a larger amount of mining advertising than any other paper  
on the Pacific coast. Its character renders it the proper  
journal for the concentration of mining patronage.

## Metallurgy.

## Pacific Chemical Works.

FALKENAU & HANKS,  
Desire to call the attention of Druggists, Manufacturers,  
Metallurgists, Millmen, Assayers, Chemists and  
Students, to their

ANALYTICAL LABORATORY,  
And Establishment for the manufacture of Pure Re-agents,  
Pharmaceutical Preparations,  
And all CHEMICALS used in the Arts. They are prepared  
to make Chemical investigations.

Analyses and Assays,  
Of every description, and to give advice upon all matters  
pertaining to Technical Chemistry.

Office, 629 Washington street; Laboratory, Corner of  
3v14-4f

BOALT & STETEFELDT,  
Metallurgists and Mining Engineers

AUSTIN, NEVADA.

Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

G. W. MAYNARD, J. A. TIEMANN,  
MAYNARD & TIEMANN,

Mining Engineers and Metallurgists,  
240 Pearl street, New York,

—AND—  
CENTRAL CITY, COLORADO.  
13v12-1y

## EUROPEAN METALLURGICAL WORKS,

Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphuretted, pyrites, and the so-called "rebel-  
lous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, refining by cupellation, done at moderate rates.

### PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit pupils on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting, re-  
fining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.

S. F. KIMBALL, J. R. MURPHY,  
10v10

## MOSHEIMER'S Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.

Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurets.

CONSULTATION OFFICE:  
328 Montgomery street, San Francisco.  
J. MOSHEIMER,  
26v13-3m Engineer and Metallurgist.

## J. A. BAUER, Chemical Laboratory,

AND DRUG STORE,  
644 Washington Street. [Established 1849.]  
SAN FRANCISCO.

Careful Analyses made of

Ores, Minerals, Waters, Oils, Liquors,  
Wines, Products of Art, etc.

Pharmaceutical Preparations Made to Order.

Opinions given on Chemical Questions and Geology.  
Particular attention paid to Analyses of all kinds, in  
cases where legal questions are involved.

Pure Nitric Acid, Nitrate of Silver, Gold Chloride, Platin  
Chloride, Sodium Amalgam. Sulphate of Copper, etc., for  
sale. 12v14-6m

### Important to Secretaries.

Secretaries will please write proper names and figures  
distinctly, and hand in their advertisements as early in the  
week as practicable. Our latest forms go to press Friday  
evening. Any infraction of the requirements of the  
laws regarding advertisements will be cheerfully given  
when solicited. Inspect all your notices carefully upon  
their first appearance. In case of postponement, give the  
earliest notice possible at the office. When copy is received  
sufficiently early, a proof-sheet will be furnished if desired.  
A revised copy rendered, for advertising at the mine, when  
required. Newly printed copies of advertisements, for  
serving individual notices to stockholders, printed at \$1 per  
hundred. Copies of the new advertising law, as officially  
published, furnished gratuitously. Blank forms, for  
filling out Assessment Notices and Delinquent Sales, sup-  
plied free to advertisers in the MINING AND SCIENTIFIC PRESS  
on application at the office.

DEWEY & CO., Publishers,  
505 Clay street, corner Sansome, San Francisco.

## Trades and Manufactures.

WM. BARTLING. HENRY KIMBALL.  
BARTLING & KIMBALL,  
BOOK BINDERS,  
Paper Rulers and Blank Book Manufacturers,  
505 Clay street, (southwest cor. Sansome),  
15v12-3m SAN FRANCISCO.

JOHN DANIEL,  
(SUCCESSOR TO O. GORI)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Monuments, Tombs, Planners' Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
spectfully solicited. 5v8-3m

NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.

Bartow's Metallic Burial Caskets and Cases,  
11f

THEODORE KALLENBERG,  
Maker of Models for Inventors.

MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
OSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair-  
ing of machinery promptly attended to.  
No. 418 Market street, San Francisco. n7-1f

Palmer's Patent  
ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
629 Washington Street, San Francisco, Cal. 10v8-1m

HUCKS & LAMBERT,  
SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L.  
AXLE GREASE,  
Natoma Street and North Beach,  
2v13-3m SAN FRANCISCO.

LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

M. M. COOK & SON,  
No. 801 Battery street,  
13v13-3m SAN FRANCISCO.

## SAN FRANCISCO Cordage Manufactory!

CONSTANTLY ON HAND A LARGE ASSORTMENT  
—OF—  
MANILA CORDAGE,  
Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.  
Office, at TUBBS & CO'S, 611 and 613 Front street.  
23- Manufactory at the Potrero. 11v14-1q

CARDS \$3  
Per 1,000  
—AND—  
Lower Rates  
—FOR—  
5,000.  
Sterrett & Cubery  
PRINTERS,  
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—BELOW—  
MONTGOMERY STREET.  
19v13-3m

J. M. STOCKMAN,  
Manufacturer of  
PATTERNS AND MODELS,  
(Over W. T. Garratt's Brass Foundry.)  
S. E. Corner of Mission and Fremont sts.,  
6v14tf SAN FRANCISCO.

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LOOKING-GLASS  
—AND—  
PICTURE FRAME MAKER,  
No. 41 Third street,  
Near corner of Jesse.  
19v12-3m

McNALLY & HAWKINS,  
Plumbers and Gas-Fitters,  
No. 645 Market street,  
Adjoining R. C. Orphan Asylum, nearly opp. Mont'y street,  
SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
13v12-2q

TO VICTIMS OF RHEUMATISM IN  
ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH  
this terrible and excruciating disease, that the means  
of a safe, speedy and permanent cure are within the reach  
of every sufferer, by using

RICHARDS' REMEDY!  
For Inflammatory, Chronic, Hereditary and Mercurial  
Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all  
the modifications of the disease, whether confined to one  
portion of system or erratic in their character. Composed  
wholly of VEGETABLE EXTRACTS, it exterminates the  
cause without injuring the constitution. None but the  
TORTURED SUPERBES who have been relieved from  
their agony by the operation of this remedy, can realize the  
ecstasy which the mere cessation of long-continued tor-  
ment imparts. Sleep returns, strength returns, health and  
hope return to the pain-worn and debilitated patient, and  
once cured, nothing but the grossest imprudence can lead  
to a relapse. The confidence with which these statements  
are made to the public, is the result of many years' ob-  
servation and experience. The reputation of mere palli-  
atives soon dies out, but that of a STERLING MEDICINE,  
which produces, year after year, in all cases, the same bene-  
ficial effects, NEVER DIES. This has been the history of  
Richards' Remedy. Try it!

RICHARDS' REMEDY is for sale by  
H. BOWMAN, Druggist, Sacramento,  
11v15 And by Druggists generally.

GAS.—The Marysville Appeal says, that  
all the oil boring works in the Coast Range  
foot-hills, Colusa county, have ceased, but  
one. The well of the company in operation  
has been sunk to the depth of about 500  
feet. It yields a steady supply of a good  
illuminating gas, and pipes are being laid  
for the purpose of lighting a mill with it.

### To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS  
County, with steam mill fitted up with Amalgamating  
Pans, etc., FOR SALE. The mine has three main veins, and  
more than \$20,000 have been spent in opening them and com-  
pleting the mill. Good wagon roads all the way. Apply to  
BELLOC FRERES, Bankers,  
23v13-6m 633 Clay street, San Francisco.

### Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
steady and successful experience in working ores in Washoe,  
and is practiced in saving sulphurets and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz operator. Address F. B. SHAW,  
San Francisco, care Mining and Scientific Press. 10v14-3m

### Professional Cards.

SHERMAN DAY,  
Mining Engineer,  
No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
22q

FREDERICK MANSELL,  
Mechanical & Architectural Draughtsman,  
No. 422 California street, corner of Leidsdorff.  
Drawings of MOORE'S made for parties applying for pa-  
ents at Washington or London. mar23-1f

GREGORY YALE,  
Attorney and Counsellor at Law,  
No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866, and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

V. E. JOYCE,  
NOTARY PUBLIC,  
N. E. cor. of Washington and Battery sts.  
12v14tf SAN FRANCISCO.

JAMES M. TAYLOR,  
Attorney and Counsellor at Law,  
COURT COMMISSIONER, appointed by the Fourth District  
Court, COMMISSIONER OF DEEDS for Nevada  
and Massachusetts,  
Court Block, San Francisco.  
Entrances opposite City Hall, Merchant street, and 636  
14v11tf Clay street.

W. E. GOLDSMITH,  
Card and Seal Engraver,  
505 Montgomery street, up-stairs, (over Tucker's),  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

GEORGE H. POWERS, M. D.,  
Gives exclusive attention to  
Diseases of the Eye.  
Office, southwest corner of Bush and Mont-  
gomery streets, Room 7 and 8. Office hours, 10½ to 12, and  
2 to 4 o'clock.  
References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and  
L. B. Benchley. 4v13tf

Preserve Your Sight!  
C. MULLER, Optician,  
205 Montgomery Street, - - Russ Block,  
Invariably suits the Eyes by a proper selection of his  
Glasses. Price of Perfect Glasses, \$2.50 and upward.  
Sent pre-paid to any post office on the Coast. Applicants by  
mail will receive a circular containing directions, etc.  
Address, C. MULLER, Optician,  
2v14tf 205 Montgomery street, San Francisco.

DR. H. AUSTIN,  
DENTIST,  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-4y

DR. A. HARTMAN,  
Electro-Magnetic Physician,  
CURES ALL CURABLE DISEASES, BY THE CON-  
centration of the vital forces. Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
made to walk, and the sick healed. Come and see the af-  
flicted at the rooms. They will speak for themselves. The  
poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating  
rooms, 410 Kearny street, between Pine and California.  
21v13m

JACOB SHEW,  
Pioneer Photographer,  
612 Clay street, north side, four doors above Montgomery.  
(Late 315 Montgomery street.)  
Takes all kinds of Photographs in the best style of the Art.  
He would invite especial attention to the new "Cabinet  
Photographs," which he is making to perfection.  
10v11f



## New Mining Advertisements.

**Big Blue Lead Gold and Silver Mining Company.**—Cove District, Kern County, California.

Notice.—There are delinquent, upon the following described stock, an account of assessment levied on the nineteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bailey, J. R.	137	5	\$25.00
Calvert, William	138	5	25 00
Calvert, W. M.	139	5	25 00
Crandell, D. L.	140	20	25 00
Crandell, O. L.	141	10	50 00
Douglas, Wm M.	142	5	15 00
Douglas, Wm M.	143	5	15 00
Donnell, Wm M.	144	2	10 00
Douglas, Wm M.	145	1	5 00
Douglas, Wm M.	146	1	5 00
Douglas, Wm M.	147	1	5 00
Douglas, Wm M.	148	1	5 00
Douglas, Wm M.	149	1	5 00
Douglas, Wm M.	150	1	5 00
Douglas, Wm M.	151	1	5 00
Douglas, Wm M.	152	1	5 00
Douglas, Wm M.	153	1	5 00
Douglas, Wm M.	154	1	5 00
Douglas, Wm M.	155	1	5 00
Douglas, Wm M.	156	1	5 00
Douglas, Wm M.	157	1	5 00
Douglas, Wm M.	158	1	5 00
Douglas, Wm M.	159	1	5 00
Douglas, Wm M.	160	1	5 00
Douglas, Wm M.	161	1	5 00
Douglas, Wm M.	162	1	5 00
Douglas, Wm M.	163	1	5 00
Douglas, Wm M.	164	1	5 00
Douglas, Wm M.	165	1	5 00
Douglas, Wm M.	166	1	5 00
Douglas, Wm M.	167	1	5 00
Douglas, Wm M.	168	1	5 00
Douglas, Wm M.	169	1	5 00
Douglas, Wm M.	170	1	5 00
Douglas, Wm M.	171	1	5 00
Douglas, Wm M.	172	1	5 00
Douglas, Wm M.	173	1	5 00
Douglas, Wm M.	174	1	5 00
Douglas, Wm M.	175	1	5 00
Douglas, Wm M.	176	1	5 00
Douglas, Wm M.	177	1	5 00
Douglas, Wm M.	178	1	5 00
Douglas, Wm M.	179	1	5 00
Douglas, Wm M.	180	1	5 00
Douglas, Wm M.	181	1	5 00
Douglas, Wm M.	182	1	5 00
Douglas, Wm M.	183	1	5 00
Douglas, Wm M.	184	1	5 00
Douglas, Wm M.	185	1	5 00
Douglas, Wm M.	186	1	5 00
Douglas, Wm M.	187	1	5 00
Douglas, Wm M.	188	1	5 00
Douglas, Wm M.	189	1	5 00
Douglas, Wm M.	190	1	5 00
Douglas, Wm M.	191	1	5 00
Douglas, Wm M.	192	1	5 00
Douglas, Wm M.	193	1	5 00
Douglas, Wm M.	194	1	5 00
Douglas, Wm M.	195	1	5 00
Douglas, Wm M.	196	1	5 00
Douglas, Wm M.	197	1	5 00
Douglas, Wm M.	198	1	5 00
Douglas, Wm M.	199	1	5 00
Douglas, Wm M.	200	1	5 00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

M. O. ELMORE, Secretary.

Office, 302 Montgomery street, San Francisco. ap2

**Chippewa Mining Company—District of Ures,** Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of March, 1867, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 318 California street, up stairs, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. m9

**Dardanelles Copper Mining Company, Low** Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held at Crescent City, on the sixteenth day of March, 1867, an order was made annulling the assessments levied February 29th, 1864, April 7th, 1865, August 22d, 1865, and June 21st, 1866, and levying an assessment of forty-five (45) cents per share upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary at Crescent City, California.

All stockholders having paid on the aforesaid annulled assessments, will have credit on this assessment. Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the first day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. O. WOOD, Secretary.

Office, at Woodbury &amp; Marhofer, Crescent City, Cal. ap5

**George Washington Gold and Silver Mining Company.**—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 18. Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of April, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the eleventh day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. O. WOOD, Secretary.

Office, 333 Montgomery street, San Francisco. ap9

**Lyon Mill and Mining Company, Kelsey District,** El Dorado County, California.—Office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of April, 1867, an assessment of two (\$2) dollars per share was levied upon each and every share of the capital stock of the Lyon Mill and Mining Company, payable immediately, in United States gold coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, will be advertised on that day as delinquent, and unless payment shall be made before, will be sold on Saturday, the eighteenth day of May, 1867, at 12 o'clock M. of that day, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

## Mining Notices—Continued.

**Coscan Silver Mining Company, Coscan District,** State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of March, 1867, an assessment of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately in United States gold and silver coin, to CHAS. RAUM, Secretary, at the office of this Company, 510 Battery street, opposite the Custom House, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the third day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. RAUM, Secretary.

Office, No. 510 Battery street, opposite the Custom House, San Francisco, California. mh16

**Camargo Gold and Silver Mining Company,** Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Campbell, J. A.	7	5	\$100.00
Drinkhouse, J. A.	8	5	60 00
Dinkelspiel, L.	51	5	60 00
Harker, W. B. C.	23	20	100 00
Harker, W. B. C.	24	10	20 00
Harker, J. W.	134	3	50 00
Jacobs, N. B.	85	4	20 00
Greene, N. O.	83	4	20 00
Frost, A. J.	133	3	50 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. mar30

**Diana Gold and Silver Mining Company, Lander** County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the third day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the fourth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. mar30

**Emilia Mining Company, State of Guerrero,** Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 20th day of February, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm Boehm	bal 3	30	\$15 00
Wm Boehm	207	10	7 50
Wm Boehm	bal 208	10	5 00
M J McManis	bal 209	10	5 00
E Schneider	bal 280	100	50 00
Sam'l Theodore	10	20	15 00
Sam'l Theodore	11	20	15 00
Philip Dege	13	40	37 50
H Kenitzer	bal 16	20	10 00
J O McFarlan	bal 146	50	25 00
L Hirsch	19	10	15 00
L Hirsch	20	20	15 00
P Sesser	26	20	15 00
P Sesser	33	30	22 50
Joseph Bank	bal 29	10	10 00
A Wiener	bal 31	10	5 00
B Cunningham	bal 124	40	20 00
B Cunningham	bal 129	30	15 00
B Cunningham	bal 130	10	5 00
B Cunningham	bal 132	20	10 00
B Cunningham	bal 134	30	15 00
B Cunningham	bal 135	20	10 00
B Cunningham	bal 136	10	5 00
B Cunningham	bal 139	25	12 50
B Cunningham	bal 140	25	12 50
B Cunningham	bal 141	15	7 50
B Cunningham	bal 142	15	7 50
B Cunningham	bal 143	15	7 50
B Cunningham	bal 144	15	7 50
B Cunningham	bal 145	15	7 50
B Cunningham	bal 146	15	7 50
B Cunningham	bal 147	15	7 50
B Cunningham	bal 148	15	7 50
B Cunningham	bal 149	15	7 50
B Cunningham	bal 150	15	7 50
B Cunningham	bal 151	15	7 50
B Cunningham	bal 152	15	7 50
B Cunningham	bal 153	15	7 50
B Cunningham	bal 154	15	7 50
B Cunningham	bal 155	15	7 50
B Cunningham	bal 156	15	7 50
B Cunningham	bal 157	15	7 50
B Cunningham	bal 158	15	7 50
B Cunningham	bal 159	15	7 50
B Cunningham	bal 160	15	7 50
B Cunningham	bal 161	15	7 50
B Cunningham	bal 162	15	7 50
B Cunningham	bal 163	15	7 50
B Cunningham	bal 164	15	7 50
B Cunningham	bal 165	15	7 50
B Cunningham	bal 166	15	7 50
B Cunningham	bal 167	15	7 50
B Cunningham	bal 168	15	7 50
B Cunningham	bal 169	15	7 50
B Cunningham	bal 170	15	7 50
B Cunningham	bal 171	15	7 50
B Cunningham	bal 172	15	7 50
B Cunningham	bal 173	15	7 50
B Cunningham	bal 174	15	7 50
B Cunningham	bal 175	15	7 50
B Cunningham	bal 176	15	7 50
B Cunningham	bal 177	15	7 50
B Cunningham	bal 178	15	7 50
B Cunningham	bal 179	15	7 50
B Cunningham	bal 180	15	7 50
B Cunningham	bal 181	15	7 50
B Cunningham	bal 182	15	7 50
B Cunningham	bal 183	15	7 50
B Cunningham	bal 184	15	7 50
B Cunningham	bal 185	15	7 50
B Cunningham	bal 186	15	7 50
B Cunningham	bal 187	15	7 50
B Cunningham	bal 188	15	7 50
B Cunningham	bal 189	15	7 50
B Cunningham	bal 190	15	7 50
B Cunningham	bal 191	15	7 50
B Cunningham	bal 192	15	7 50
B Cunningham	bal 193	15	7 50
B Cunningham	bal 194	15	7 50
B Cunningham	bal 195	15	7 50
B Cunningham	bal 196	15	7 50
B Cunningham	bal 197	15	7 50
B Cunningham	bal 198	15	7 50
B Cunningham	bal 199	15	7 50
B Cunningham	bal 200	15	7 50

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Monday, the eighth day of April, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

MAX. BURCKHEART, Secretary.

Office, Room No. 1, Crim House, No. 523 Kearny street, San Francisco, Cal. mar23

**Olney & Co., Auctioneers and Real Estate Agents,** attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. nol0**Gold Quarry Company. Location of Works:** Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of March, 1867, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, (Room No. 4) No. 706 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.

Office, Room No. 4, 706 Montgomery street, San Francisco, Cal. mar23

**Great Central Mining Company.—Location of** Works: Yuma County, Arizona Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first (1st) day of March, 1867, an assessment of one (\$1) dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the thirtieth day of April, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 302 Montgomery street. mar9

**Keystone Mining Company. Location of Works:** Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, No. 410 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. P. SUTTON, Secretary.

Office, 410 California street, San Francisco. mar9

**Mount Tenabe Silver Mining Company.—Lo-**cation of Works: Cortez District, Lander County, State of Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Oordon, John	18	75	\$112 50
Gillespie, Henry	19	37	55 50
Galagher, James	50	100	150 00
Hest, J. R.	27	270	414 00
Lehmann, Christian	24	5	7 50
Macpherson, A. W.	26	299	448 50
Vandervoort, J. C.	23	50	75 00

And in accordance with law, and an order of the Board of Trustees, made on the fifteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesrooms of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Thursday, the eleventh day of April, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.

Office, 331 Montgomery street, San Francisco. mar23

**Nuestra Señora de Guadalupe Silver Mining** Company. Location of Works: Tayoltita, San Dimas District, Durango, Mexico.

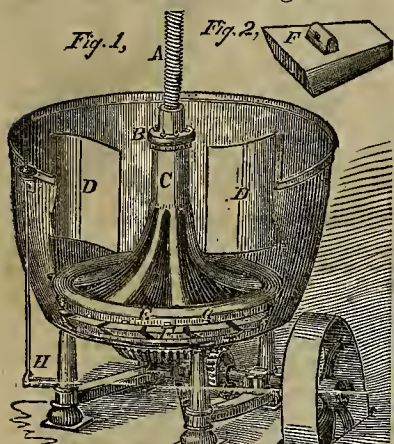
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of March, 1867, an assessment of No. 25 of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, E. J. PFEIFFER, at the office, No. 210 Fourth street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the seventh day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the fifteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the stream owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—bottom wearing down even with the dries.

Mr. J. H. STEWART, the inventor, has had ten years' experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and sellers for themselves, at the **PACIFIC FOUNDRY,** 1st San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco.

## BRUCKNER'S Mechanical Roasting Furnace

AWARDED A

## PREMIUM SILVER MEDAL

—BY THE—

## The Mechanics' Institute.

Patented December, 1863.

THESE FURNACES ARE NOW MANUFACTURED AFTER an improved mode of construction, which GREATLY SIMPLIFIES THEIR OPERATION, and afford a much larger oxidizing surface to the action of heat and atmosphere.

The weight of a Furnace nine feet long by four feet in diameter does not exceed one ton.

## THE IMPROVED FURNACE

May be seen in operation, for desulphurizing or roasting and chloridizing, at Central Mill, Virginia City, Nevada.

Parties wishing to erect such Furnaces, are requested to leave their orders with

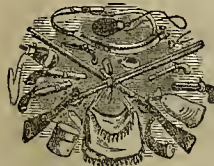
T. KALLENBERG,

416 Market street, San Francisco.

## REMINGTON'S ARMOY.

Agency, 310 Washington st., San Francisco.

## PRICES REDUCED!

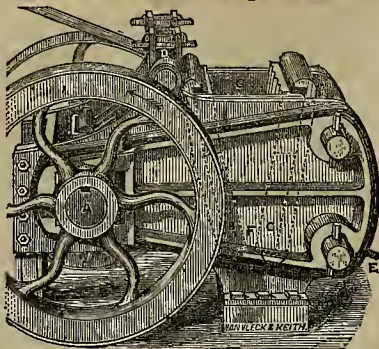


These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Guns—an entirely new and most perfect one. All the new models for sale very low.

ALBERT E. CRANE.

Our Circulation.—THE MINING AND SCIENTIFIC PRESS has a large and permanent subscription list, and enjoys a more universal circulation among stockholders and persons directly interested in mining than any other paper on this coast.

## Brodie's Patented Improvements



## FOR THE TREATMENT OF Gold and Silver Ores.

BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this improved Machine for breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low terms: No. 1—Or 8-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600. No. 2—Or 12-inch Crusher, capable of reducing through five to six tons per hour—price, \$850. No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour—price, \$1,200.

EXPLANATION OF THE ABOVE ENGRAVING. The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed rock to fall into the hopper below. The hopper is made of stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, P, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and submit to fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

Rawhide Ranch, Tuolumne Co., Sept. 28, 1866. JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st Nov. 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel. A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1866.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866. J. BRODIE & F. A. BLAKE, Express Building, 402 Montgomery street, San Francisco.

## Hooker's Patent Pump Valve.



A. A. A. are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber facing, which is secured to the bottom of the Valve by a washer and screw, and is not liable to wear or tear. The advantages claimed for this Valve are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the Valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water. One drawing for the use or manufacture of this Valve, are for sale by

V. CUSHING, 120 Front street, San Francisco. These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

## Notice to Miners,

## Well-Borers and Water Companies.

M. PRAO IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that trade, to business men prepared to fill orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

813-17 Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

## WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077

313st

SAN FRANCISCO.

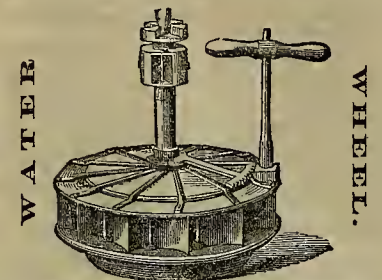
## Brown's Filtering Heater!

FOR PREVENTING INCORUSTATION IN STEAM BOILERS, purifies water from lime and iron impurities, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

One in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to

514-17 AUSTIN A. WELLS, Agent.

## LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALLED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. Send for Circular to

KNAPP & GRANT, Agents for California.

26-13-17y 310 Washington street, San Francisco

## To Quartz Miners and Others.

### NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tellurides, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for.

1v14-5m JAMES HITCHENS.

## STRONG & CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by

2v13 O. W. STRONO, Assayer.

## STEAM HOISTING APPARATUS.

A Hoadley 15-Horse Power

## PORTABLE ENGINE,

With V Friction Hoisting Gear, 4-foot Drum,

## LATEST IMPROVEMENTS,

Has been used for a month,

## For Sale Cheap!

On account of previous purchaser who suspended work

## TREADWELL & CO.,

Corner Market and Fremont streets, San Francisco.

10v14-1m

## NELSON & DOBLE,

AGENTS FOR

## Thomas Firth & Sons' Cast Steel Files,

Etc., Sbear, Spring, German, Plow, Blister and Toe Chalk Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

319 and 321 Pine street,

Between Montgomery and Sansome, San Francisco.

10v14-1r

## FOR SALE!

PATENT RIGHT OF HUNT'S WINDMILL for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

E. O. HUNT,

28 SECOND STREET,

11v24 San Francisco.

## Nitro-Glycerin!

WE ARE INFORMED THAT CERTAIN PERSONS ARE offering to manufacture and sell Nitro-Glycerin, to be used for Explosions in Oil Wells, Blasting or other purposes.

This is to notify the public that the United States Blasting Oil Company is the sole owner of the Nobel Patents for manufacturing Nitro-Glycerin, and for exploiting the same; and that any and all infringements of the Company's rights will be prosecuted in law.

The Company is now prepared to supply any desired quantity of the best quality of Nitro-Glycerin to the public, with instructions how to use it and avoid accidents. Orders to be addressed to JAMES DEVEAU, Secretary, 32 Pine street, New York.

11v14-1m

T. P. SHAFNER, President U. S. Blasting Oil Company.

32 Pine street, New York.

## V. CUSHING, Agent

## For the Purchase and Shipping of Machinery OF ALL KINDS.

SPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco.

3v14-1r

## The Terrace Desulphurizing Furnace.

In connection with the "Shelf Furnace" described in our issue of last week, it will doubtless be interesting to many of our readers to learn of another furnace, which works on the same principle, but differs somewhat in its construction. It is known as the "Terrace Furnace," and though but quite a recent invention, is coming into general use in Germany, Hungary and Swansea. One of these furnaces has recently been put up at the works of S. E. Lyon & Co., in Colorado, where it is said to give good satisfaction. We copy the following description of it from the Colorado Mining Register:

In construction it resembles a smoke stack of bricks or stone some twenty feet high. The inside dimensions are two and a half by four and a half feet. This inside opening extends from top to bottom. On the top is a hopper, into which the pulverized ores are thrown; and from which they are fed into the furnace by a revolving apparatus, which operates with great regularity, perfectly controlling the amount of ore admitted. Across the furnace from the hopper nearly to the bottom, bars of burned fire-clay are placed so that as the ore falls into the furnace it drops from one to another, probably striking twenty or more of them before it reaches the bottom, thus greatly impeding its descent. At the bottom is a fire-grate, where a fire is kept up seven or eight hours, when the furnace becomes thoroughly heated and the fire is no longer needed, the combustion of the ores furnishing abundant heat. Thus when the ores fall into the furnace at the top they are at once ignited, as in the Keith furnace, and before they reach the bottom are thoroughly oxidized and desulphurized. After once becoming hot, the fire-grate is closed, and only place left at the bottom for shoveling out the ores as they fall. The fumes, of course, rise upward to the hopper on the top, where at one side is an opening into a flue, which draws these fumes down again nearly to the level of the base of the furnace, where they pass off laterally to a condensing chamber, where the fine particles of ore are collected, the gases passing on to a perpendicular flue, and escaping there. Additional condensers for collecting the sulphuric acid evolved may be easily attached if desired. When once heated up, the combustion of the ores will, without the aid of fuel, keep up the requisite amount of heat from one year's end to another, as long as the furnace lasts. The leading and important features of the furnace are that the work is well done, and with very little expense. The first cost of one of these furnaces will not exceed one thousand dollars. One person can attend six of them without difficulty. When the ores contain a large amount of sulphur, as most of them do, no fuel is required after the furnace has been heated. A furnace of this kind is capable of roasting four tons per day.

Our readers will at once observe the similarity of construction between this and the furnace which we described last week; the essential difference is such, as is claimed that the "Terrace Furnace" may be made self-feeding. The idea that it can be made to furnish its own fuel, and perfect the work of desulphurization, after being once heated up, must be incorrect, as will be readily apparent to every one at all conversant with the great heat required for throwing off the last equivalent of sulphur. Such a furnace might answer for copper ores where the completeness of the desulphurization is not so necessary as in auriferous sulphurets. The adjunct of the reverberatory, we think, will be found absolutely necessary for the proper treatment of such sulphurets.

REVISION OF THE MINT LAWS.—A Washington telegram to the *Alta*, of date April 2d, is as follows: The Secretary of the Treasury has sent a letter to the Senate in reference to the revision of the Mint laws. He proposes that the Mint relinquish the refining of gold and silver, and leave the business wholly to private enterprise, and also repeal the coinage charge. He transmits a communication from Louis A. Garnett, formerly the officer of the Mint at San Francisco, now connected with an extensive silver refinery. He says the abrogation of all taxes and restrictions on milling enterprises, and the repeal of all charges at the Mint, would tend to develop the country and increase its products of the precious metals.



A. T. STEWART, the princely merchant of New York, promises to be a noble rival even to Peabody, in the extent, if not in the number of his benefactions. It is said that he intends to devote six millions for the benefit of the poor in New York city, in the way of furnishing them with comfortable and healthy dwellings. He is also erecting a splendid Art Gallery of the most imperishable materials, for the benefit of his adopted city. Where is John Jacob Astor? Does he not intend to enter the lists of noble rivalry with Peabody and Stewart? Or will he hold fast to his hoarded wealth, and continue to grind the poor that he may be, or his son may be called, the richest man in the world?—richest in sordid dust; but poor indeed in that which most ennobles a man, and longest keeps his memory green and fresh in the hearts of coming generations.

**BREAKING UP FROZEN GROUND.**—Before the work on the Eastern end of the Pacific Railroad was suspended, last winter, recourse was had to gunpowder. The contractor says that he found the most expeditious way to break up frozen ground was to blast it up with powder, a few pounds of which, thus employed, would do the work of a score of laborers. Powder, for such purposes, is much used in the mines in this State, when it is necessary to loosen up the ground before sluicing it off. It has also been used to break up ground, as well as rocks, for grading.

The copper mines of Tennessee have yielded since the war more than one thousand million pounds of ingot copper.

**MELLVILLE C. KEITH, M. D.**  
**Homopathic Physician,**  
 No. 26 Montgomery st., opposite the Lick House, (Room 12,  
 SAN FRANCISCO.  
 Devotes special attention to CANCER, PARALYSIS and  
 CHRONIC DISEASES. Consultation free.  
 13v13 6mnr

**WOODWARD'S GARDENS!**  
**MUSEUM,**  
 Art Galleries, Conservatories and Zoological Grounds,  
 On Mission and Valencia streets, between Thirteenth and  
 Fourteenth streets.  
**Open Every Day!**

**ADMISSION:**  
 To all parts of the Garden.....25 Cents.  
 Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
 These Gardens are accessible by the Howard, Folsom and Market street Cars.  
 Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

**Pratt's Abolition Oil.**  
**FOR ABOLISHING PAIN—THE BEST REMEDY IN**  
 existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 634 Sacramento street, opposite Whittier House, San Francisco. 10v14-ly

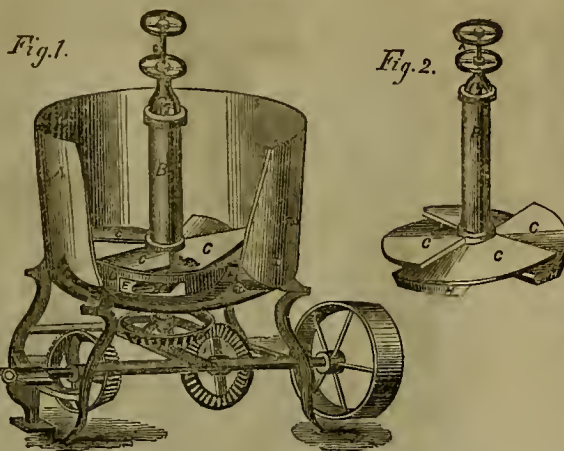
**ROWLAND, WALKER & CO.,**  
**GROCERS,**  
 Nos. 516 and 518 Washington street,  
 Are offering a complete assortment of GROCERIES at the  
 LOWEST RATES. Quality guaranteed.  
 Goods delivered at any point within the city limits.  
 22v13-ly

**California Steam Navigation**  
**COMPANY.**  
 Steamer CAPITAL.....CAPT. E. A. POOLE  
 " CHRYSOPOLES.....CAPT. A. FOSTER.  
 " YOSEMITE.....CAPT. W. BROMLEY  
 " CORNELIA.....CAPT. E. CONCLIN.  
 One of the above steamers leave BROADWAY WHARF  
 at 4 o'clock P. M. EVERY DAY (Sundays excepted), for  
 Sacramento and Stockton, connecting with light-draft  
 steamers for Marysville, Colusa, Chico, and Red Bluff.  
 Steamships ALAX, PACIFIC, ORIZABA, CALIFORNIA,  
 ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.  
 Office of the Company, northeast corner of Front and Jackson streets.  
**B. M. HARTSHORNE,**  
 President.  
 13v12

**Just Published.**  
**THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS OF THE NERVOUS SYSTEM AND REPRODUCTIVE ORGANS, to be had by addressing and inclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco.** 12v13 ly

## Gaston's Screw Grinder and Amalgamator

—18—  
 The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw miller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the miller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the miller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the miller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

**Stair Work of all kinds,**  
**MADE TO ORDER**  
 And Shipped to all parts of the Coast.

**N. P. LANGLAND,**  
**STAIR BUILDER,**  
 No. 49 Beal street,  
 Between Market and Mission,  
 SAN FRANCISCO.  
 10v14-ly

**Never Posts and Brackets**  
 CONSTANTLY  
 On Hand and for Sale.

**PACIFIC POWDER MILL**  
**COMPANY'S**  
**BLASTING POWDER!**  
 MANUFACTURED  
**IN MARIN COUNTY,**  
**CALIFORNIA.**  
 FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
**AGENTS,**  
 414 Front Street, San Francisco.  
 3v14-1m

**HAYWARD, COLEMAN & CO.,**  
 IMPORTERS AND REFINERS  
**OF—**  
**Illuminating, Lubricating,**  
**—AND—**  
**PAINT OILS!**  
 CONSISTING OF  
 KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
 TANNERS' NEATFOOT, BOILED AND RAW  
 LINSEED, CASTOR AND CHINA NUT.  
 —ALSO—  
**SPIRITS OF TURPENTINE & ALCOHOL**

Note.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
 A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**  
 An elegant and complete assortment on hand. 13v13m19  
 414 Front street, San Francisco.

**Job Printing Press for Sale—\$250.**

A Largest Size (half medium) RUOGLES' BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to  
 DEWEY & CO.,  
 Mining and Scientific Press Office.

## Portable Steam Engines!

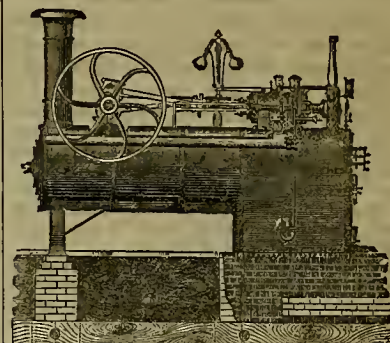
"Hoadley's" and "Hittinger's" Make.



HOADLEY'S.

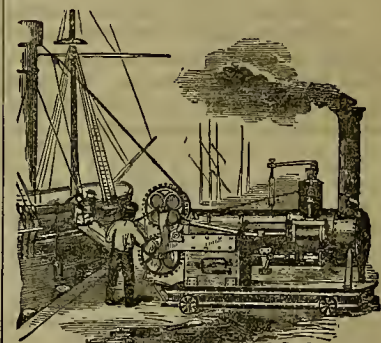
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

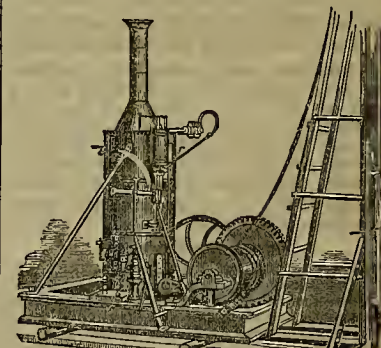
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.  
 These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.  
 Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the miner's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.  
 All sizes on hand from 3 to 30 horse power, with and without carriages.  
 Also, Portable Saw and Grist Mills.  
 For sale by  
**TREADWELL & CO.,**  
 Corner of Front Market and streets.  
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**JOHN TAYLOR & CO.**  
**IMPORTERS,**  
 AND DEALERS IN  
**ASSAYERS' MATERIALS,**  
 Druggists' & Chemists' Glassware,  
 Photographic Stock, Etc.  
 512 and 514 Washington Street,  
 SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
 And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast.  
 A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' Sundries, Acids and Chemicals, constantly on hand.  
 San Francisco March 6, 1855. 11v10-1f

**WE ARE NOW OFFERING**  
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**—OF—**  
**Fine Custom Made Clothing**  
**—AND—**  
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**AT PRICES THAT DEFY COMPETITION.**  
 Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**  
 BOTH OF MATERIAL AND FINISH.

A Large Assortment of  
**Trunks, Valises, Carpet Bags, Blankets, Etc.,**  
 AT EXTREMELY LOW PRICES.  
**J. R. MEAD & CO.,**  
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 Cor. of Washington and Sansome streets.

ELECTROTYPES CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

62,371.—THERMO-ALARM GAUGE.—Richard Savage, San José, Cal.:

I claim the above described thermo-alarm gauge in combination with a steam generator.

62,378.—CASE FOR TRANSPORTING EGGS.—J. L. and G. W. Stevens, San Francisco, Cal.

We claim a case for packing and transporting eggs, constructed with compartments substantially as and for the purpose herein described.

62,431.—AUTOMATIC FAN.—J. A. W. Lundborg, San Francisco, Cal.

I claim the frame, B, bearing the shaft, R, to which is attached the fan, C, having metallic frame, c2, when constructed and arranged to operate with the clock-work, as herein set forth.

## RECENT INVENTIONS.

**SUBMARINE HYDRAULIC MACHINE.**—Mr. John Pike, of Astoria, is the inventor of a contrivance for dredging the bottom of a stream. The motive power is steam. The invention contemplates a graduated hose which will work in any depth of water without the intervention of a diver. It is to be used exactly as mining hydraulic apparatus—to disintegrate and wash out the deposit on which it is played. The inventor claims that he can take the apparatus, on any of the bars of a river, and by playing the hose on the gravel or sand aggregation, can sluice it out and thus deepen any channel which can be dredged by the ordinary method, and at far less expense. The hose may be carried on shipboard, and, attached to the engines, may be used for getting the vessel afloat when stuck upon a shoal, by washing the ground from under it.—*Oregonian.*

**A NEW MOTIVE POWER.**—James G. Duncan, of Rattlesnake Bar, Placer county, has recently invented a new motive power, which he describes as follows: "It is an Electric Engine. The model weighs forty-two pounds, and works admirably. It runs fast or slow, backwards or forwards, with great or limited power at will, and is under perfect control; has an eight-inch stroke, and the whole is quite simple, not complicated in any way. It gives 210 pounds direct power, or working power. Estimating from the size and power of the model, I can make a fifty-horse power machine, which could be placed in a box 6x6 and eight feet long, and the cost of running it would not exceed one dollar every five days, for acids to supply the battery." The inventor is anxious to secure assistance to enable him to demonstrate the value of his invention on a large scale.

**A NEW GRADING MACHINE,** working on the principle of a scooper, has recently been devised at the East, which it is said is likely to prove valuable in this State, especially for turnpikes and railroads in localities composed mainly of sand, small gravel, loam or clay. We understand that Mr. Brannan has ordered one of the machines for use on his Calistoga road. It is said that one machine will do as much work as six men, with carts and horses. One of the machines may be seen at Rosekrans' hardware store in this city.

**Beware of Counterfeits!**—NOTICE TO THE PUBLIC. "Healy's Rheumatic Liniment" having been imitated (poorly, however,) by an inferior and pernicious article, and sold in this market for the genuine, the proprietor of Healy's Rheumatic Liniment has made an alteration in the general Trade Mark, and also substituted for Rheumatic Liniment "Curative Oil." This Great Remedy will be known hereafter as "HEALY'S CURATIVE OIL." 15v14f

**Stebbins' Grinder, Amalgamator and Concentrator,** combined and all within the same pan, can now be seen in operation at the Franklin Foundry, Fremont street, between Mission and Howard. Sulphurets perfectly concentrated within thirty minutes on the rim of the pan near the surface of the water—the process of grinding and amalgamating going on at the same time. All the inventor asks is an examination of his new Concentrator, believing it to be the best and quickest ever yet invented. 14v14 f

## CHICKERING &amp; SONS'

## PIANO FORTES

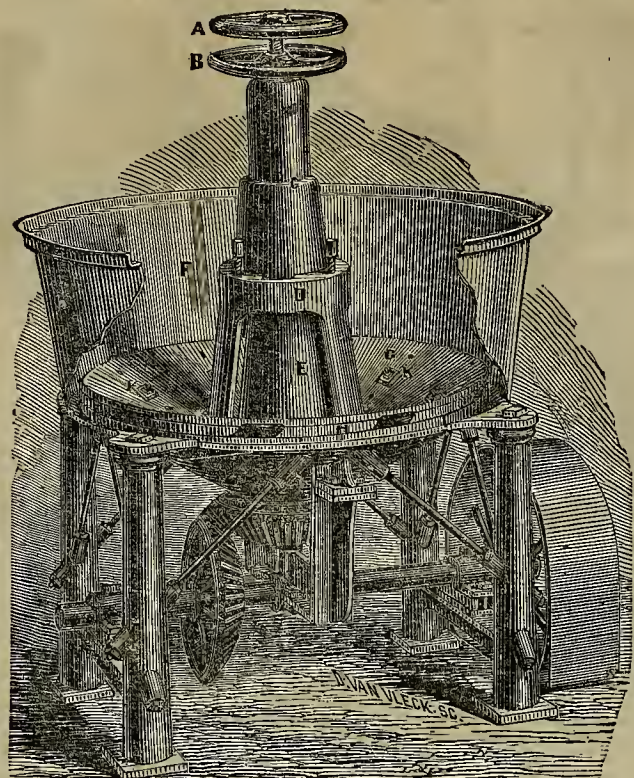
Never fail to stand any climate.

The only Perfect Pianos

They lead in all valuable improvements—all others follow.

Agents: KOHLER, CHASE & CO.,

421 Montgomery street, bet. California and Sacramento. 14v14n14p

HEPBURN & PETERSON'S PANS AND SEPARATORS,  
For Reducing and Amalgamating Gold and Silver Ores.

We invite the Mining Public to examine the record of our Machines before adopting any other for producing similar results. They have been in general use for the past three years, during which time they have been repeatedly tried in comparison with every other machine of note, and of a similar nature, and have invariably been adopted in preference; which facts we offer as the most suitable recommendation, and which is attested by the following list of

## Principal Mills Using them:

Names of Companies.	Location of Mill.	Names of Companies.	Location of Mill.
GOULD & CURRY.....	Virginia City, Nevada.	TEARLE, ROGERS & CO.....	Nevada.
SILVER STATE REDUCT'N WKS.....	Empire City, "	MELVILLE KELLEY.....	Silver City, "
OPHIR.....	Washoe City, "	HUDCIN & FORMAN.....	Silver City, "
EDWARD McLEAN.....	Silver City, "	YELLOW JACKET.....	Empire City, "
SANTIAGO.....	Zephyr Flat, "	BELDON & GREGORY.....	Esmeralda, "
RAPHAEL & HUSTED.....	Gold Hill, "	HECKENDORN.....	Calaveras Co., Cal.
FRENCH & BESLER.....	Dayton, "	CARSON CRACK.....	Calaveras Co., "
HERMAN, KETSCHER & CO.....	Carson River, "	CROWN LEAD.....	Mariposa Co., "
A. SUTRO.....	Dayton, "	BIG BLUE LEAD.....	Tulare Co., "
DAVIS & BARRON.....	Carson City, "	E. T. STEEN.....	Amador Co., "
PHOENIX.....	Silver City, "	EAGLE.....	Amador Co., "
CHAS. S. COOPER.....	Silver City, "	IDA MINE.....	Owens River, "
PIONEER.....	Silver City, "	ALACRAN.....	Sonora, Mexico.
L. A. BOOTH & CO.....	Virginia City, "	SANTA CLARA.....	Sonora, "
A. DELAND.....	Washoe, "	ROSARIO & CARMAN.....	Sonora, "
SUGGAR MILL & MINING CO.....	Gold Hill, "	LIBERTAD.....	Sonora, "
RODGERS & ORISSAM.....	Silver City, "	DON JUAN ROBINSON.....	Sonora, "
ANDERSON & SEAL.....	Washoe, "		

## Manufactured at the Principal Foundries in San Francisco.

6v12f-1stS

At the VULCAN IRON WORKS, Nos 137 and 139 First Street, San Francisco.

A VALUABLE AND USEFUL JOURNAL—ESTABLISHED IN 1860.

W. B. EWER.

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**PATENT AGENTS,**  
PUBLISHERS OF THE

**Mining and Scientific Press**  
—AND—  
**BOOK AND JOB PRINTERS,**

605 CLAY ST. SAN FRANCISCO. COR. SANSOME.

PRINTING OF EVERY VARIETY CORRECTLY AND PROMPTLY DONE.

BLAKE'S PATENT  
QUARTZ CRUSHER.

## CAUTION!

The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1886.

This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other material is crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

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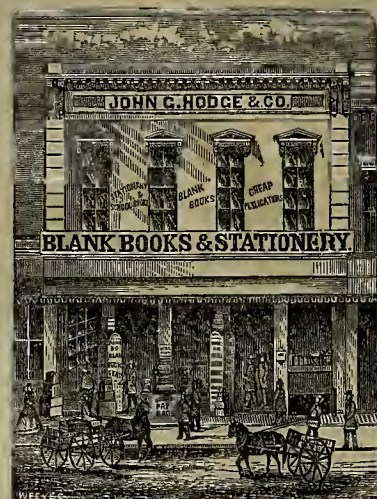
## Mining Engineer and Metallurgist,

(Graduate of the Mining Academy, Freiberg, Germany.)

Oro, Flint District, Owyhee Co., Idaho.

REFERENCES.—George Hearst, John W. Gashwiler, Richn.  
Hemre & Co. and J. M. McDonald, San Francisco; E. R.  
Purple, New York; William Bigler, Penn. 14v14-3m\*

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**MINERAL LANDS IN DISTRICT NO. 8.**—R. M. Wilson of Tuolumne county, was on the 9th inst. appointed by U. S. Surveyor General Upson, Deputy Surveyor for this mineral district, comprising the counties of Tuolumne, Mariposa, Fresno, Merced and Stanislaus. His office will be at Sonora, Tuolumne county. Those who are in possession of mining or agricultural lands in those counties can now secure patents for them. These deputy-surveyors will always be in a position to give information in regard to mining or farming property, in their respective districts. They will be men of intelligence, and will be under heavy bonds to properly discharge the duties of their office.

**THE RAILROAD CONSTRUCTOR ENDORSED.** Immediately after the last trial of the railroad constructor on Friday last, the following endorsement of the value of the invention was written by an engineer present, who had no interest in the machine, and handed to Mr. Robertson, the inventor: "The undersigned, Civil Engineers, have this day witnessed a trial of Mr. Robertson's railroad track-laying machine, and take pleasure in pronouncing it, as far as this trial went, a perfect success. As a labor-saving machine, in distributing materials for a railroad track, its value is very great. We see no reason why it should not do all that is claimed for it." Signed—Richard P. Hammond, T. R. Brooks, William Epler, William Moberly, B. P. Brunner, and others.

**NOT OUR FAULT.**—The Reese River Reveille of April 4th, in criticizing the report of the Nevada State Mineralogist, speaks of a statement in that report—made "on the authority of the MINING AND SCIENTIFIC PRESS"—as incorrect. The paragraph is wrongly quoted in the report, as will be apparent on reference to the article. It will be found in the Press for Oct. 13th, 1866.

**HONOR TO WHOM HONOR IS DUE.**—Capt. J. L. Worden, who commanded the never-to-be-forgotten Monitor, at the time of her victory over the Merrimac in Hampton Roads five years ago, arrived in this harbor on the 6th inst., in command of the war steamer Pensacola.

**MERCANTILE LIBRARY ASSOCIATION.**—We have received a copy of the Fourteenth Annual Report of the President, Treasurer and Librarian of this Institution. It contains tabular statistics from the organization to the present time.

## The Antioch Copper Mines--Cause of their Failure.

Ross Browne, in his report on the mineral resources of the Pacific coast, gives the following very interesting account of the copper smelting works, put up in 1862 at Antioch, on the San Joaquin river, near Mount Diablo. The works were erected under the direction of Mr. Thomas Price, an experienced Welch metallurgist, who has been for several years engaged in the purchase of copper ores in this city, on account of English smelters, being at the same time in the employ of Kellogg, Hewston & Co., as their analytical chemist, but not superintendent, as stated in the report. Mr. Price is also Professor of Chemistry at the City College, and in the Toland Medical College.

The works consisted of two reverberatory furnaces—one for roasting and one for smelting—not "a reverberatory furnace and roasting kiln." They were built on the plan of those in use at Swansea, but on a somewhat smaller scale, and with a slight change in the form of the grate, to better adapt them to the character of Mount Diablo coal. These furnaces were built as an experiment, chiefly to test the adaptability of the Mount Diablo coal for smelting purposes, and to ascertain the quality and quantity of heat which it will generate. The report says:

It would occupy too much space to enter into any extended details of the nature of this coal; but it may be necessary, to make the subject plain to those who have never paid any attention to the study of such matters, to state that in a reverberatory furnace the fire in its passage up the chimney strikes the roof, and is forced down upon the ore by means of a "bridge," built between it and the burning fuel. In all flames, no matter how generated, there is one portion more intensely hot than the others. This is called the "reducing flame," because of its action in reducing ores, under certain conditions, into metals. All coals do not produce a flame of the same nature or length, and the operation of the reverberatory furnace depends, in a great measure, upon its being so constructed that the "bridge" is placed so that the reducing portion of the flame is caused to strike the ore at the proper point.

After this explanation it will not require any technical or scientific knowledge of the principles of combustion to understand that a furnace to use fuel, which burns with a short flame and little smoke, requires great modifications in its construction when it is to be used to burn fuel which produces a long flame and much smoke. The experiments at Antioch settled this point clearly, if not satisfactorily to those interested, and proves, for general information, that furnaces built on the plan of those used at Swansea, in which the short-flamed Welsh coal is used, are not adapted for the use of the long-flamed coals of the Pacific coast. But the question whether this long-flamed coal could not be used for smelting purposes, in a suitably constructed furnace, remains still unsettled. Mr. Price states that Mount Diablo coal could be economically used for that purpose in a properly constructed furnace, but thinks no attempt should be made to proceed any further than in the conversion of the ores into regulus. The price of all descriptions of coal being so much higher on this coast than a better article can be obtained in other countries, the refining of the metal can be more profitably done in those countries.

It is much to be regretted that the company, which expended nearly \$50,000 [The cost of the furnaces was only \$7,000.—Eds. Press], in making these experiments at Antioch, did not carry them out to a full conclusion, by permitting Mr. Price to make such changes in the form of the furnace as his skill and experience may have suggested. But in California, where money commands from 18 to 24 per cent. interest, such experiments are not considered profitable.

The first bar of metal from the Antioch smelting works was received at San Francisco on the 14th of September, 1863, and created almost as much interest as the first bar of bullion from Washoe. During the time these works were in operation they produced about 200 tons of matt, or regulus, of an average of about fifty per cent. [Mr. Price informs us that the average did not exceed forty-two per cent.—Eds. Press], the balance being iron, sulphur, silica, etc. This was obtained from about 2,000 tons of ores from various parts of the State, but chiefly from Copperopolis, of an average of about ten per cent., and none of which, as delivered in lots, was below 7½ per cent.

The coal used in the operations cost about seven dollars per ton delivered on the grounds of the company. One ton of this coal, it was estimated, would reduce two tons of ore, after the furnace had become thoroughly heated; but in consequence of the difficulty in obtaining good materials for lining it, the furnace was not kept steadily heated. The best imported fire-bricks, in consequence of the action of the sulphur [1] in the ore, would not endure more than about fifteen days [2]. Work had consequently to be stopped within that period, and everything cooled off, in order to re-line the furnace. This entailed a great loss in the cost of fuel and labor, as well as of metal, and as the works were calculated to operate on about eight tons of ore in twenty-four hours, these stoppages absorbed all the profits.

A Mr. Henry Davis, another practical Welsh copper smelter, who had been in charge of an extensive smelting establishment in Chilo previous to his arrival on this coast, has made a number of experiments at the works at Antioch since they were closed by the original owners. This gentleman also expresses the opinion that the Mount Diablo coal, used in a properly constructed furnace, could be profitably employed in the reduction to regulus of such ores as will not pay the ship bulk [3].

1. Sulphur has no action upon the walls of the furnace; the injury results from the silica, alumina and oxide of iron, combining with the material of which the bricks are composed, thus changing their original nature, and rendering them reducible under great heat.

2. The furnace will work much longer than the period named, with the exception of a small portion of the lining in immediate contact with the matted mass. There is but little general wear to the great portion of even the lining of the furnace. The small portion which was affected at the furnaces at Antioch is also equally affected in furnace operations in Swansea, where the very best materials are employed. It is not necessary to stop the furnaces to make the repairs so required, as they are such as can be readily repaired in a few minutes, between the charges.

3. Reverberatory furnaces can, undoubtedly, be made to work well with Mount Diablo coal, with a slight change in the fire-place from that used at Antioch. Another very important advantage might also

be obtained by mixing the Mount Diablo coal with about one-fourth its weight of Sydney coal. In this manner the whole would form one compact mass, and the saving, in being able to burn all the Diablo coal, would more than compensate for the extra cost.

Mount Diablo coal, when thrown upon a hot fire breaks up into very small pieces, and is suddenly converted into a mass of fine coal, which will not allow the air to pass through it, and the moment you touch your grate-bars, the coal falls through unconsumed. The bars have, consequently, to be kept so close that little draft can be obtained; while in a reverberatory furnace a well opened grate is necessary for draft. This can only be obtained with Mount Diablo coal, by mixing it with some other very highly coking coal.

There is little doubt but that copper smelting will be carried on here profitably, and at an early day. The demand for copper in California is very great, and there is no reason why this State may not eventually supply the great market for this metal, both in India and China. India alone takes some 15,000 tons of metallic copper from Great Britain annually, a large portion of which probably finds its way into China. This trade properly belongs to San Francisco, and with proper effort may eventually be secured. The great importance of this trade may be realized, when we consider the fact that to produce 15,000 tons of metallic copper, not less than 75,000 tons of twenty per cent. ore or 150,000 tons of ten per cent. ore is required. We intend to take up this subject in earnest soon, and lay before our readers a true statement of what can and should be done in this State with regard to copper smelting.

India and China probably afford the best market for copper in the world, and one which must continue to increase in proportion as those countries open up their intercourse with other parts of the world. The copper shipped thither from England goes forward in small bars or ingots, of from six ounces to one or two pounds in weight, and is extensively used there as a medium of exchange, the same as gold and silver bullion.

**ECONOMICAL ILLUMINATING GAS.**—The Pacific Woolen Mills, at the corner of Nineteenth and Folsom streets, are now lighted by the new Ensley gas, which we have several times alluded to as a very economical illuminating agent, obtained by a recently patented process, from wood and animal matter. The gas appears to be fully equal to that furnished by the San Francisco Gas Company in the ordinary way, from coal. Large numbers of our citizens have been out to see it during several evenings of the past week. We shall, next week, endeavor to give a full description of this gas, its mode of manufacture, and its economy and applicability on a large scale to this and other large cities, as well as to isolated localities and small communities.

"The Reese River country and its Mines," from "A. J. H.," will receive due attention.



## Communications.

IN THIS DEPARTMENT we invite the FREE discussion of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The New Mineral (?) "Partzite."

EDITORS PRESS:—In your issue of the 9th inst., you have favored my notice and description of the new mineral "Partzite" with a rejoinder, which calls in question the correctness, not only of my assumption as to the novelty of the said mineral, but also my statements regarding some of its characteristics. Permit me to say that your remarks in this respect are based upon grounds such as I should never have expected to be called upon to refute. In writing to a "scientific" journal on a scientific subject, I deemed it of course unnecessary first to enter into an explanation of terms for which science has long established a certain definite meaning. If people upon this coast are pleased to use the words, Mineral, Rock, and Ore, *ad libitum*, and without special distinction, it is certainly not asking too much that men of science keep aloof from such a confounding disregard for a terminology, without which it is impossible to make one's self understood and avoid confusion in matters of science. Now, as it is plain that the main point at issue between us lies simply in a misapplication of terms, on your part, it will be necessary first to state what science means by the terms above mentioned.

A *Mineral* is any substance in inorganic nature which has a homogeneous structure, certain uniform physical properties, and a fixed chemical composition. The term, therefore excludes all mere mechanical compounds, and only refers to substances which conform to some distinct chemical formula. Thus galena is a mineral, because it always consists of one equivalent of lead and one equivalent of sulphur, and has always the same physical properties. For the same reason are calcite, silver glance, copper and iron pyrites, quartz, etc., minerals.

"A *Rock* is any bed, layer or mass of the material of the earth's crust. The term, in common language, is restricted to the consolidated material. But in Geology it is often applied to all kinds, whether solid or unconsolidated earth, so as to include, beside granite, limestone, conglomerates, sandstone, clay-slates, and the like solid rocks, gravel-beds, clay-beds, alluvium, and any loose deposits, whenever arranged in regular layers or strata, as the result of natural causes. The constituents of rocks are minerals."—*Dana's Geology*, p. 49.

An *Ore* is any substance found in inorganic nature, which contains a metal, or several metals, that may be turned to practical use. Such metals may be either in their pure or "native" state, or in chemical combination with oxygen, sulphur, arsenic, carbonic acid, silica, etc. A piece of ore may also be a mineral, which is the case whenever the metalliferous substance which constitutes it is in a specific chemical combination, and free from all incidental admixture, commonly called "gangue;" but generally an ore is a complex of various minerals.

A mineral may also become an ore, through association of a metal. Thus, if the mineral "quartz" contains gold, it attains the character of an ore. The same it is if the calcite deposited in the fissure of a vein carries chloride of silver, and the peculiar conglomerate called "gold cement," and consisting of numerous minerals, is an ore, because it contains gold. There seems to prevail among the people on this coast, a strange aversion to the word "ore," which I can only ascribe to their general fondness for odd names and terms. When a miner meets in the bottom of a shaft with the object of his search, he will hardly ever say that he struck ore; no, he struck rock, or mineral, although it was rock composed of minerals that he had to go through all the way from the surface. If such linguistic violence is even winked at by the public press, whose office it would seem to be to

check it, we are certainly on the road to Babylonian confusion.

Now, in my article on Partzite, it was not my intention to give a description of the Blind Spring ores. What I intended and did, was to describe a certain mineral, one certain homogeneous body, which I found among those ores, and so long as it is not shown that this same mineral has heretofore been examined and described, and so long as no analysis of a mineral can be produced which corresponds to the formula established for the Partzite, the latter is unquestionably to be recognized as a *new mineral*. It matters not if the same mineral occurs in other mining localities, and if years ago silver has been reduced from it. An animal may for thousands of years have dwelt in some remote corner of the earth, and may ever so long have been known to the aborigines of that region; but the moment it becomes known to science it is a zoological novelty; and Partzite, becoming known to science, is, for a like reason, a mineralogical novelty.

But there is another dusky point, which requires a little illumination. You speak of an analysis made by some friend, whom you do not name. I wish you had prevailed upon that gentleman to personally enter the arena, as, in a controversy like this, it is far more agreeable to directly address one's opponent than to argue with him through the editor of a paper. This is especially felt when truth calls for directness of expression; and I am compelled to say, that what your friend seems to have considered an analysis, has not even the semblance of such a thing. The results of an analysis are generally given in per cents., the total of which must give a sum verging on one hundred, and the greater or less deviation of that sum from one hundred indicates the degree of exactness exercised by the analyzer. What you state as the result of two analyses, gives in one case the sum of 51.5, and in the other, 62.5. May I ask what has become of the missing 48.5 and 37.5 per cent. of the "analyzed" substance? It is true your friend adds: "With carbonic acid, silica and sulphur," and he might as well have added "several other things;" but if one makes an analysis, using the term in its true application, one is not permitted to say, "with this and that," but is required to give the percentage of "this and that," particularly when it is intended to disprove or question the correctness of an analysis by another person; and, besides all this, how can something be called an analysis, in which a mixture of two bodies, such as lead and antimony, amounting respectively to 41 and 46.5 per cent., is given per estimate. But here, again, is one of those peculiar Californian violations of the English language, lying at the bottom of the misunderstanding. I have often been requested to make an analysis for silver or gold. This is simply nonsense. The purpose of an analysis is to determine, with almost mathematical accuracy, each and every component part of a given substance; and as its results are generally more of a scientific than of a direct practical interest, and consequently their own aim and end, the work does not admit of taking time and expense into account. If, on the other hand, one or more component parts of a substance are to be determined for some practical purpose, requiring no absolute exactness, but claiming, as practical things generally do, a due regard for time and expense, an *assay* does the work. The special province of an assay is to determine the existence, chemical nature and quantity of useful metals, or other useful minerals, that may be contained in a piece of ore or rock, or in an artificial product. An analysis has no particular reference to the practically useful, but must be absolutely impartial, and pay the same respect to the inutile parts of a substance, as to the utile.

Your friend has made no analysis of a mineral, but simply assays of some ore; and the correctness of his assay I do not question. The Blind Spring ores contain all the substances he enumerates, and a good many more. Besides Partzite, which constitutes their principal metalliferous mineral, they also contain native silver, chloride of silver, silicate and carbonate of copper, galena, oxide, carbonate and sulphate of lead, spathic iron, peroxide of iron, quartz, clay, etc. From this list you will see whence came the "carbonic acid, silica and sulphur." I am, however, a little surprised that your friend found no iron, which so much abounds in the Blind Spring ores.

There remains yet a word to be said about the hardness of the Partzite. I found it to scratch calc-spar, while it was scratched by fluor-spar. Its hardness, consequently, lies between three and four, according to the scale accepted by all modern mineralogists. How your friend managed to determine a hardness of 4.5—4.7 and of 4.2, is certainly

an enigma to which mineralogy in its present state of development furnishes no key. It must, therefore, be presumed that his *modus operandi* is based upon some new invention or discovery which yet remains a secret, and by the publication of which he would confer a benefit upon science, and much oblige, Yours very respectfully,

ALBERT ARENTS,  
Mining Engineer and Metallurgist.  
Blind Spring Dist., Feb. 26, '87.

P. S.—Allow me to correct a slight error in my first article on Partzite. CH in line 32, should be CIH.

I am sending you for your cabinet, two samples of Blind Spring ore, which mainly consists of Partzite.

[Written for the Mining and Scientific Press.]

GRASS VALLEY, March 13, 1867.

EDITORS PRESS:—You state in one of your late issues "That a mass of iron weighing 1,000 pounds at the equator, would weigh 1,005 pounds at the pole." Last spring the *Californian* contained several articles to the same purport, in which the writer, a Professor, asserted, that a person purchasing a ton of coffee at the equator, would find he had gained considerable in weight upon bringing it north toward the pole; as the weight is caused by the attraction of gravitation, which increases as we near the pole, I am under the impression (perhaps erroneously) that both the above propositions are deduced from false premises. In the first place, neither iron nor coffee are weighed with a "spring balance," which is the only instrument with which the article weighed would change its weight, with a difference of gravitation. In the second place, I believe that an article weighed with a spring balance would weigh *more*, and not *less*, at the equator than at the poles. My reasons for believing so are the following: "Gravitation is what constitutes the weight of bodies, and depends upon the quantity of matter in the bodies attracting, and their distances from each other." \* \* \* From the above law it follows that large bodies attract much more strongly than small ones, provided their densities are equal, and their distances the same.—*Herschell*.

Now the equatorial diameter of the earth is twenty-six miles greater than the polar diameter; consequently, a mass of iron on the surface of the earth at the equator would most undoubtedly be affected by this superabundance of matter, and, as far as I can see, it could only be affected in one way, and that is, it would weigh more than where the diameter is less.

A. C. D.

The question of gravitation involved in the above communication, was quite fully discussed in the *American Artisan*, pages 198 and 230 of the present volume. The matter is not of sufficient practical importance to warrant any very elaborate discussion upon it in our already crowded columns; although we should not object to giving place to a rejoinder to "A. C. D." should it be brief and to the point.—[Eds. PRESS.]

## From Pahrnanagat.

PAHRNANAGAT, March 16th, 1867.

MESSRS. EDITORS:—You will be glad to hear that we at last have a prospect of mail facilities at an early day. At present our postal matter comes to us burdened with extravagant express charges; the result is that hardly any papers are taken here. The MINING AND SCIENTIFIC PRESS is a favorite here, and as soon as mail service is put on, you will have quite a list of subscribers from this place.

The Pioneer mill has made two runs—the first of thirty tons second-class ore, wet crushed, amalgamated twenty-six per cent. of the assay; sulphurets saved. The second of seven tons first-class ore, dry crushed and roasted, yielded nearly 200 pounds of silver bullion, very pure, and equal to ninety per cent. of the assay. The rock was from the Illinois, a monster ledge, though the quality of the rock is considered inferior to that of most others in this district.

The machinery of two 10-stamp mills is nearly all on the ground, and early spring will find times lively.

It must not be forgotten that the Pharanagat valley contains over ten thousand acres of excellent land, and our farmers are busy opening their farms, and preparing for operations in the spring.

ORION.

## The Brown's Valley Mill Experiments.

EDITORS PRESS:—In answer to the remarks of your correspondent, "T. M.," I will state that the experiments in our Pennsylvania mill, were made in the three Chile mills, with tailings of exactly the same value; the same quality of quartz was crushed in the four batteries, and these "tailings" were the result of blanket concentrations from three batteries. One Chile mill, you will recollect, was fed direct from one battery; the tailings passing over copper plates only.

I stated in my communication to the *Appal*, that during twenty-four hours each of the three Chile mills had been charged with a certain quantity of sand; but I omitted to state that the forty-eight ounces of amalgam obtained were the result of one week's run of the four Chile mills. If each of the mills had been worked after the manner of No. 4, the result of the four together should have been, per week, ninety-six ounces of amalgam, or at \$5 per ounce, \$480—from 1,440 shovelfuls only; for the result of 50 per cent. of these tailings was entirely lost by making the experiments in Chile mills, 1, 2 and 3.

The great difference in the result of Chile mills 2 and 4, I simply ascribe to the richness of the mechanical part of gold contained in the sulphurets, which assay \$550 per ton; for it can scarcely be supposed that it really requires four hours grinding in a Chile mill to reduce to slime such sand as may only contain free gold.

The Pennsylvania had, during this winter, very great trouble with water—they are now over it, and have again a full supply of rich rock for their sixteen stamps. They continue to make different kinds of experiments with tailings, sand and sulphurets. When finished, you shall hear from me. M.

Brown's Valley, April, 1867.

## Frictional Resistance of Water.

EDITORS PRESS:—In your issue of March 23d, page 179, a short article appears, stating that "the friction of fifty square feet of surface on a vessel's side, which has been smoothly painted, is found to be about eight pounds at four nautical miles per hour; when the speed is increased to eight miles, the friction is increased to twenty-five pounds; at sixteen miles, the friction would be seventy-five pounds."

This does not seem to accord with previous experiments made by eminent engineers, both in this country and in Europe—Beafoy and others—which go to establish that the friction is very nearly as the square of velocity. If, therefore, four miles per hour gives eight pounds, eight miles per hour ought to give thirty-two pounds, and sixteen miles per hour ought to give one hundred and twenty-eight pounds.

The following is an extract from Col. Beafoy's work:

Velocity in feet per second...	2	4	6	8	10	12
Friction in lbs. per 50 square feet.	0.637	2.647	5.777	10.06	15.45	21.94

The friction in this table is very nearly as the square of the velocity, which, as applied to miles or knots per hour, will give—

Speed in knots per hour.	4	8	16
Friction in lbs. per 50 square ft.	7	27	100

STEAMER.

San Francisco, April 2, 1864.

PNEUMATIC RAILWAY.—The New Jersey Legislature has before it a bill to incorporate a company for the purpose of constructing a pneumatic railway between New York and Washington. A model was exhibited recently at the State House in Trenton, which worked satisfactorily.

SIX-POUND MOLARS.—The *Amador Ledger* of April 6th says another of those mammoth teeth was found last week on the Dane ranch by the miners. Its length was ten inches. The place where it was found is 2,500 feet above the sea level. Several of these teeth were exhumed in the same neighborhood some years ago.

CONCENTRATORS IN NEW YORK.—Mr. J. Hendy informs us that a set of working drawings for his improved concentrator, have been forwarded to manufacturers in New York city.



## Mechanical.

## Enameling—Important Improvement.

Enamels are substances of the nature of glass, differing from it, however, by a greater degree of opacity, and in most cases of fusibility. The ancients carried the art of *ornamental enameling* to a very high degree of perfection; exceeding, in some of their productions, anything which can now be accomplished. The cause of the loss of these, and many other curious processes of the ancients, has arisen from the fact that it was the custom in those days for each artisan to make a mystery of the means in the accomplishment of his work, that succeeded best with him, and his secret was often carried with him to the grave. The modern device of "Letters Patent," by which every inventor is protected for a reasonable length of time in his invention or discovery, provided he will place the same on permanent record for the benefit of future generations, has effected a most important revolution in that particular. The Patent Office system is the great preserver, as well as protector, of inventions.

The chief efforts of modern civilization in the line of enameling, as in most other departments of discovery and invention, has been utility rather than ornament. To this end various devices have been resorted to, to render permanent and innocuous the enameling of iron and earthen ware for manufacturing and household purposes. It has long been thought that combinations of innocuous earths *might* be made which would accomplish this purpose; but hitherto no art has been able to make them available. Muspratt, in his Chemical Dictionary, the latest work of the kind published, suggests that it would be well to try a combination of sulphate of baryta as the base of an enamel, supposing that it might be so combined with certain fluxes as to be rendered solid and firm enough to resist such heat, acids, and other conditions as are involved in the ordinary employment of wares so prepared. He suggests that a series of experiments should be tried, with that end in view.

From recent reports from Hartz, we judge that the above idea of Muspratt has been fully realized, and by the use of the very material he suggested—the sulphate of baryta. This mineral has been successfully employed for enameling iron vessels, without the accompaniment of either tin or lead; and it is said that the baryta-enamel is far more durable and unchangeable than the poisonous material heretofore employed. The reason for this arises from the fact that the sulphate of baryta is a compound of one of the strongest acids, and is not decomposed by any other acid—at least under ordinary heat—and is entirely unaffected by vinegar or acidulated fruit, etc., even upon continuous boiling. This enamel, moreover, does not become dull or rough; but it is thought it will remain perfectly white and smooth, with ordinary usage, until destroyed from breakage or other rough use.

Enamelled cast iron kettles for the laboratory and kitchen, in the latter especially, for making preserves and doing up fruit, have of late years come into very extensive use. The objection, which has of late years been urged against their use, on the score of the poisonous nature of the enamel will probably be removed as soon as the general knowledge of the improved enamel, shall have sufficed to drive the objectionable article from the market.

Every housewife should take especial precaution when she buys an enamelled kettle, to test the enamel by means of some acid—the stronger the better. Dip a piece of cotton into the acid, then place it on the enamel for twenty-four hours, subjected, if convenient, at least a part of the time, to a moderate heat. If the spot is ever so slightly roughened, or otherwise defaced, reject the vessel as unfit for use.

**EARLY IRON VESSELS.**—The earliest form adopted for the construction of iron vessels, were wall-sided, flat-bottomed troughs of thick sheet iron, riveted together at the seams like steam boilers, precisely like a long, trough-like tank, fitted with a wooden cover for a deck. They were just such vessels as would have been devised for boiling a whale entire, had such an operation been desired. They were built upon the Clyde, where such splendid specimens of iron naval architecture have since been turned out. They answered well the object for which they were designed—the navigation of shoal rivers, and served the purpose of the introduction of a new era into the mechanics of ship building. The little iron steamers which are now being built in this city, by Mr. Cameron, of the Neptune Iron Works, for the Lake Chapala (Mexican) trade, are almost the exact *fac similes* of those early efforts at iron ship building. They, too, answer exactly the service for which they are intended; nothing could do better. They would doubtless be found great improvements over the flat-bottomed wooden steamers which are now employed in navigating the shallow rivers of California.

**IRON SUPPORTS—USEFUL RULES.**—In these days of iron fronts and iron supports, when iron forms such an important portion of our metropolitan structures, the following extract from a very able, useful and practical paper, lately read before the Liverpool Architectural Society, may be read with much profit and interest. We quote as follows:

It may be truly said that gravity is the ultimate source of all the strains that arise in buildings; but for convenience it is necessary to resolve the resultant into compression and tension. It was formerly usual to employ iron chiefly to resist the latter, but economy of space and length of bearing have brought both into its service. \* \* \* The first point to be ascertained by an architect with a casting of iron is to find out what it has to do.

The practical man wants simple tools. Science is always consistent with successful practice; therefore simple rules are sufficient. The following for iron pipes of ordinary sizes answers well, and it never has been published before. It is based upon the fact that a 10-inch pipe one inch thick will stand the pressure of 100 yards head of water. The coincidence of one inch of metal to every 10-inch diameter and 100 yards pressure should be remembered. For every inch in the diameter of pipe, increase or deduct one-tenth of an inch, and for every yard of pressure increase or deduct one hundredth of an inch.

In calculating the strength of columns great care is necessary. The safe plan is to find the diameter of a solid column necessary to bear the compression, and then distribute the same area of metal in tube form as a hollow column. \* \* \* A solid column ten feet long, and having an area of ten square inches (good metal) will bear ten tons pressure. This rule can be conveniently carried out, and it is safe and practical. It is really not so much what we know as what we can successfully use that is valuable in science and art.

**STEAM SUPERHEATING.**—All the benefits obtained from superheating steam by passing it through tubes in a furnace before it is admitted into the cylinders, is said to be also obtained by keeping steam in a jacket surrounding the cylinder, and maintaining it at a temperature somewhat above that which operates the piston. It has been found in practice that the very dry steam which is produced in the tubes running through a furnace cuts the cylinders and packing. Steam jacketed cylinders are being extensively employed in England.

**COKE** is generally supposed to be capable of producing a hotter fire than anthracite. The intensity of heat is in proportion to the amount of combustion in a given space. The fuel which burns the quickest and occupies the smallest space, should give the hottest fire.

**HARDENING BY FRICTION.**—Steel spindles for cotton spinning, are heated for hardening at the step end by friction, on a revolving wheel, without the aid of fire.

## Scientific Miscellany.

## Inland Salt Deposits—How Formed.

Various speculations have been indulged in, from time to time, with regard to the manner in which large deposits of rock salt have been formed. The most probable theory may be briefly stated as follows:

It is well known that the waves of the sea throw up large quantities of sand, which is often subsequently piled up by the winds into hillocks and ridges, sometimes to the height of 100 to 150 feet. The beach to the west of this city, and, in fact the chief part of the peninsula on which the city is built, most likely had its origin from such a source. It often happens that after a ridge is thus formed, counter-currents may scoop out a place back of them to the level, or even lower, than the sea. At unusual high tides, and during heavy storms, the water may be forced over the intervening banks, so as to fill up the depression beyond. There being no opportunity for the water to escape, it is soon evaporated by the heat of the sun, leaving a deposit of salt. By the frequent recurrence of such action of the sea, a heavy deposit of salt is formed, eventually, which, under favorable conditions, is often of great purity and thickness. Such was evidently the origin of the famous deposit near New Iberia, La., first brought to the general knowledge of the world during the late rebellion; at least such is the opinion of Prof. Richard Owen, of Indiana, who recently visited that locality, and made a careful examination of it. The Professor further states, that there are evidences of similar saline inundations in that vicinity, extending fully twenty miles inland from the Gulf; but in no other locality than the one alluded to, have the conditions been sufficiently favorable for any very valuable deposit.

The salt deposit on Carmen Island, in the Gulf of California, is precisely such another deposit, in process of aggregation, or would be on the increase were it not for the large drains which commerce is daily making upon its bulk. The "mountain of salt," as it is called, on the Colorado, is another instance of the same action on an ancient sea-beach, which has since been considerably elevated and exposed to the abrading action of the winds, which have swept the sand from its base until the salt, formerly occupying a basin, now stands up above the surrounding plain like a mountain.

**TIDES IN THE GREAT LAKES.**—The question of the existence of lunar tides in the great lakes has never been fully established until quite recently, when Col. J. D. Graham, U. S. A., presented to the American Association for the Advancement of Science, the result of a series of careful observations and measurements, made with the especial view of determining the question. It appears from his report that there is such a tide, but that its maximum height is only *four and a half inches*.

**NATURAL MINERAL WATERS** are in part derived from decomposing rocks, but in part from the water which impregnates the buried marine sediments, and is really fossil sea-water. This, more or less modified or diluted by admixture, forms most saline mineral waters. The amount of water imprisoned in the unaltered sedimentary rocks of the earth is very great, amounting for many limestones and sandstones to from five to thirty per cent. of their volume. So that, without speaking of that in the pores of the unknown rocks beneath the sea, it may be said that those of our present continents include in their pores a volume of water which is a large proportion of the bulk of our present ocean. We may even calculate that a time will come, when from the cooling of our globe, and the resulting porosity of the mass, the whole of the water, not already included in the sedimentary deposits, will be absorbed, to be followed by the atmosphere itself; so that our planet will one day be like the satellite, without either sea or air.

**PHYSIOLOGICAL EFFECTS OF SULPHIDE OF AMMONIUM.**—The physiological effects of gaseous sulphide of ammonium recently came near resulting in a fatal accident, at some experimental works in the manufacture of this gas by a new process, lately described by Peter Spence, of Manchester, England. It appears that a sudden escape of the gas accidentally took place near where a man was standing, when he became unconscious and perfectly rigid in a few moments. Violent rubbing of the chest and cold water on the head, soon re-developed vitality; but with violent convulsions which lasted an hour and a half. No ill effects, however, were perceivable the next day. The poison thus appears to be sudden and violent; but if not immediately fatal, seems to be only very transitory in its effect.

The new process for the manufacture of this gas consists in mixing a salt of ammonia, say a sulphate or chloride, with double its weight of soda waste or gas lime; blowing with the mixture a jet of steam, and condensing the escaping gas. The condensers must be closely watched, lest the gas first come over so strong as to condense in a solid form. It was by an escape of gas from such a condenser that the accident above alluded to occurred.

**HYDRAULIC CEMENTS.**—Lieut. Q. A. Gilmore, U. S. A., has recently been making some careful researches into the chemistry of hydraulic cements. His experiments show that the commonly received opinion that clay must be mixed with lime to give the property of setting under water by forming a double silicate of lime and alumina, is incorrect. The same result can be obtained by using manganese and probably other bases. The most remarkable fact proved by his experiments is, that the hydraulic property of a cement produced directly from the limestone, is materially effected by the process of calcination. If the stone be subjected to a red heat for too short a time, the hydraulic property will not be developed in the resulting lime. Also, if it be over burned, it will not give a setting lime. Further, there are successive states of calcination at which the resulting lime will possess the power of setting under water. First, if the stone be subject to a red heat for a short time, it will not give a hydraulic lime. If it be continued at red heat for another period, the lime will be hydraulic. If the heat be continued for still another period, its setting property is destroyed—and so on, for several stages. There is, however, one amount of burning for each stone which gives the best result, and which has to be determined by experiments upon the stone from various quarries and from different veins in the same quarry, and the determination of this amount of burning in each case would well repay the manufacturer of such cements, by enabling him to produce them of the best quality.

The quickness of setting is modified greatly by the temperature of the mixing water. While the adhesion of the mortar to stone depends upon its softness, and the strength upon its stiffness. Therefore a thin mortar for making joints is best, while a stiff or thick mortar is best for forming a "bed."

**PHILOSOPHY OF A SNEEZE.**—The nose receives three sets of nerves—of smell, of feeling, and of motion. The former communicates to the brain the odorous properties of substances; the second communicates the impressions of touch; the third moves muscles of the nose, but the power of these latter is very limited. When a sneeze occurs, all these faculties are excited to a high degree. When a grain of snuff excites the olfactory nerves, the brain instantly sends a mandate through the motor nerves to the muscles saying: Cast it out! and the result is unmistakable. So offensive is the enemy that the nose is not left to its own defence. It were too feeble to accomplish this. All the allied armies of muscles join in the rescue—nearly one-half of the body, arouses against the intruder—from the muscles of the lips to those of the abdomen, all unite in the effort for the expulsion of the grain of snuff.

The greatest intensity of cold on record, is that produced by Natterer, who, by means of bisulphide of carbon and protoxide of nitrogen, brought the thermometer down to 220° below zero, Fah. Faraday, by employing a bath of carbonic acid and ether, *in vacuo*, obtained an intensity of 166° below zero, Fah.



## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
April 13, 1867.

## CITY STOCKS.

City shares were quite active during the period under review. California Steam Navigation Company receded from 71 to 60 3/4 cent., then rallied to 71 1/2. S. F. Gassold at \$68.50@64 per share, and Spring Valley Water at \$67.50@66. The latter company paid its usual monthly dividend on the 10th instant. The Pacific, Union, and California Insurance companies disbursed their usual quarterly dividends—6 3/4 cent., and the National Insurance Company will pay 3 3/4 cent. on the first of May, for the quarter ending March 31st. The Bank of California pays a dividend of 1 3/4 cent. per month on the 15th instant.

## MINING SHARE MARKET.

We present below the bullion yield of ten companies located on the Comstock vein during the first quarter of 1867, as compared with the product of the same period in 1866:

COMPANY.	FIRST QUARTER IN 1867.				FIRST QUARTER IN 1866.			
	January.	February.	March.	Total.	January.	February.	March.	Total.
HALE & NORCROSS	\$102,711.72	\$111,699.44	\$173,444.02	\$387,855.18	\$140,000.00	\$150,000.00	\$110,000.00	\$400,000.00
Savage	200,000.00	270,000.00	150,000.00	620,000.00	150,000.00	150,000.00	110,000.00	410,000.00
Ophir	140,000.00	120,000.00	64,411.58	324,411.58	155,451.63	145,451.63	356,341.12	457,244.38
Yellow Jacket	156,200.37	117,453.97	109,313.85	382,968.19	111,734.13	85,000.00	96,519.65	293,253.78
Gould & Curry	60,000.00	45,165.41	52,875.47	158,040.88	123,123.32	123,123.32	460,215.17	706,461.81
Chollar-Potosi	90,000.00	100,000.00	26,000.00	216,000.00	89,716.00	85,560.00	128,585.00	303,861.00
Empire M. & M. Co.	38,157.00	26,787.00	23,021.00	87,965.00	35,121.82	27,697.00	101,885.82	164,704.64
Imperial	115,845.67	116,200.00	90,431.96	322,477.63	81,881.21	74,832.60	43,232.90	200,946.71
Confidence	22,494.21	11,388.74	8,433.04	42,315.99	19,474.12	10,411.19	12,474.01	42,359.32
Ophir	.....	.....	.....	.....	.....	.....	.....	.....
Total	\$971,730.97	\$934,539.56	\$953,428.92	\$2,859,699.45	\$671,655.41	\$602,160.72	\$317,177.13	\$2,590,993.26

BULLION PRODUCT OF THE LEADING CLAIMS ON THE COMSTOCK VEIN.

\$2,330, and closing yesterday at \$2,490. During the week ending April 6th 2,099 tons of ore were extracted, showing an assay value of \$84,929, equal to \$40.46 per ton; previous week, \$36.32 per ton. Of this amount of ore 77 tons came from the old works, 331 from the 6th station, 1,105 from the 7th, and 586 from the Curtis shaft works. The third station drift in the Curtis shaft has been carried about 50 feet towards the vein. Sinking for the fourth station has been resumed. During the week under review most of the laborers were employed in the north mine, the difficulty in hauling the ore from the Curtis shaft dump at this time necessitating a temporary stoppage of work in that portion of the mine. This company paid a dividend of \$100 per share on the 8th instant.

YELLOW JACKET—has been sold to a large extent at a marked advance over our last quotations, rising from \$945 to \$1,145, falling to \$1,060, advancing to \$1,126, and closing at \$1,151. From the March balance sheet of this company we extract the following: Receipts, \$110,316.53; expenses, \$94,783.30; assets, \$96,904.97; and liabilities, \$80,210.48. The ore worked during the month amounted to 3,074 tons, showing an average yield of \$35.92 per ton. The bullion receipts during the first quarter of 1867 exceeded the returns of the same period in 1866, \$89,289.41.

CROWN POINT—jumped from \$910 to \$1,425 early in the week, then realized \$1,250 @1,300, and closed yesterday at \$1,355. This marked appreciation is based on the discovery of a body of ore 150 feet east from the 500-foot level, which, it is said, will yield \$40 to the ton. This body of ore it is thought will extend downward. The drift from the 400-foot level above did not encounter it. The west drift from the 500-foot level is in 100 feet, but work has been suspended for the present on account of the presence of a large body of water. This company disburses a dividend of \$80 per foot on the 15th instant, and will carry over a cash surplus of \$44,530. They reduced 1,759 tons of ore during the month of March, averaging \$36.69 to the ton.

GOULD & CURRY—advanced from \$370 to \$390, seller 30, and closed at \$390, buyer 30. The bullion yield of this company was \$285,913.70 less during the first quarter of 1867, as compared with the same period of 1866.

CHOLLAR-POTOSI—sold largely since our last reference, advancing from \$295 to \$350, then selling at \$330@325, and closing at \$340. The Santa Fe station is said to continue to look well, and a wuzze sunk from this level, at a depth of eight feet, also looks well. The Blue Wing station development, in raising up, shows a body of ore from 15 to 20 feet wide. During the week ending April 6th, 1,481 tons of ore were sent to custom mills; previous week, 1,342 1/2 tons.

IMPERIAL—advanced from \$247 to \$260, and closed at \$262.50. This company disburses a dividend of \$15 per share on the 15th instant.

OPHIR—improved from \$238 to \$255, then sold at \$240@263, and closed yesterday at \$287.50. Work on the south drift from the tenth level is steadily continued at the rate of about five feet per day, in good ground, and carrying the east wall on the right. The Ophir grade road is again in a passable condition, and the revenue from this and the mill at Washoe is again helping to pay mining expenses.

EMPIRE—sold at \$175@165, and closed yesterday at \$162.50. BELCHER rose from \$115 to \$190, then sold at \$147.50@157.50, and closed at \$172.50. The KENTUCK Mining company paid a dividend of \$150 per foot on the 10th instant. On the same day \$1,500 per foot was bid for this stock. SIERRA NEVADA levied an assessment of \$4 per share on the 10th instant.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,141,006.

CALIFORNIA HANDIWORK FOR PARIS.—J. D. Boyd sent by last steamer, an addendum to his original contribution for the Paris Exposition, in the shape of a sample billiard table leg, of a new pattern designed by himself. It is of carved laurel; and the ground-work being colored and polished, the carved portion is left of the natural color in relief, and apparently of some other kind of wood. Mr. B. also sends specimens of our native cabinet woods.

## SALES OF THE WEEK

BY THE S. F. STOCK &amp; EXCHANGE BOARD

## Monday, April 8.

6 shs Confidence at 35 per share.  
20 shs Sierra Nevada at 5 per share.  
4 shs Cal Steam Nav Co at 70 per ct.  
4 shs Cal Steam Nav Co at 69 per share.  
5 shs Empire M. & M. Co. at 175 pr sh, s 30.  
20 shs Belcher at 130 per foot.  
19 shs Belcher at 150 per foot.  
1 sh Belcher at 145 per foot h 10.  
10 shs Chollar-Potosi at 320 per foot.  
13 shs Chollar-Potosi at 350 per foot.  
10 shs Yellow Jacket at 1050 per foot.  
12 shs Yellow Jacket at 1110 per foot.  
3 shs Yellow Jacket at 1100 per foot, s 30.  
2 shs Yellow Jacket at 1105 per foot s 10.  
1 shs Yellow Jacket at 1030 per foot.  
5 shs Overman at 10 per foot.  
1 shs Savage at 2090 per foot s 30.  
3 shs Savage at 2090 per foot.  
23 shs Ophir at 235 per foot.  
14 shs Ophir at 250 per foot.  
84 shs Ophir at 250 per foot.  
1 sh Imperial at 240 per share.  
1 sh Imperial at 242 1/2 per share.  
45 shs Bullion at 27 per share.  
40 shs Bullion at 31 per share.  
20 shs Bullion at 30 per share, s 30.  
12 shs Crown Point at 1300 per foot.  
12 shs Crown Point at 1425 per foot.  
12 shs Crown Point at 1425 per foot.  
12 shs Ophir at 250 per foot s 30.  
24 shs Ophir at 250 per foot.  
24 shs Ophir at 250 per foot.  
24 shs Ophir at 250 per foot.  
40 shs Sierra Nevada at 5 per share.  
50 shs Sierra Nevada at 5 50 per share.  
8 shs Crown Point at 1235 per foot.  
16 shs Crown Point at 1250 per foot.  
2 shs Savage at 2100 per foot, s 30.  
3 shs Savage at 2090 per foot.  
2 shs Savage at 2110 per foot.  
6 shs Cal Steam Nav Co at 67 1/2 per share.  
8 shs Gould & Curry at 355 per foot s 30.  
8 shs Gould & Curry at 350 per foot.  
20 shs Chollar-Potosi at 315 per foot b 30.  
23 shs Yellow Jacket at 1145 per foot.  
10 shs Belcher at 160 per foot.  
19 shs Belcher at 167.50 per foot.  
3 shs Belcher at 155 per share, s 30.  
Amount of sales.....\$251,000.00

## Tuesday, April 9.

48 shs Ophir at 245 per foot.  
24 shs Ophir at 245 per foot s 3.  
12 shs Ophir at 247.50 per foot.  
72 shs Ophir at 245 per foot, b 10.  
12 shs Ophir at 241 per foot.  
84 shs Ophir at 242.50 per foot.  
24 shs Ophir at 242 1/2 per foot, s 30.  
12 shs Ophir at 242 1/2 per foot, s 3.  
24 shs Ophir at 245 per foot b 30.  
4 shs Gould & Curry at 330 per foot c.  
4 shs Gould & Curry at 330 per foot s 3.  
7 shs Belcher at 170 per foot.  
21 shs Belcher at 175 per foot s 3.  
3 shs Belcher at 175 per foot s 3.  
1 sh Belcher at 150 per foot.  
3 shs Yellow Jacket at 1160 per foot h 30.  
8 shs Crown Point at 1250 per foot.  
1 sh Savage at 2150 per foot, s 30.  
2 shs Savage at 2170 per foot.  
1 sh Savage at 2175 per foot s 3.  
2 shs Savage at 2175 per foot s 30.  
2 shs Empire M. & M. Co. at 175 per sh.  
55 shs Bullion at 30 per share.  
15 shs Bullion at 30.50 per share.  
6 shs Overman at 11 per share.  
20 shs San Francisco Gas Co. at 63 1/2 per ct.  
10 shs S F Gas Co. at 63 per share s 30.  
10 shs Spring Valley Water at 67 1/2 per sh.  
\$10,000 Legal Tender Notes at 74 1/2 c.

## AFTERNOON SESSION.

6 shs Cal Nav Steam Nav Co at 60 per ct.  
72 shs Ophir at 240 per foot.  
96 shs Ophir at 247.50 per foot.  
3 shs Savage at 2200@2195 per foot.  
9 shs Belcher at 190@180 per foot.  
6 shs Yellow Jacket at 1050 per foot h 10.  
1 sh Yellow Jacket at 1050 per foot b 30.  
1 sh Yellow Jacket at 1090 per foot, h 30.  
10 shs Bullion at 29 per share.  
32 shs Chollar-Potosi at 330@335 per foot.  
50 shs Chollar-Potosi at 340@325 per ft s 30.  
35 shs Chollar-Potosi at 340@325 per ft, h 30.  
23 shs Crown Point at 1300@1350 per foot.  
12 shs Imperial at 250 per share b 10.  
5 shs Imperial at 249 per share.  
6 shs Imperial at 250 per share.  
\$10,000 Legal Tender Notes at 74 1/2 c.  
Amount of sales.....\$204,755.00

## Wednesday April 10.

13 shs Cal. Steam Nav. Co. at 61 pr ct s 30.  
6 shs Cal Steam Nav Co at 62@62 1/2 pr ct.  
3 shs Ophir at 250 per foot, b 10.  
156 shs Ophir at 245@250 per foot.  
25 shs Chollar-Potosi at 325@330 per ft. b 10.  
104 shs Chollar-Potosi at 325@330 per foot.  
6 shs Chollar-Potosi at 330 per foot c 30.  
8 shs Empire M. & M. Co. at 165@170, b 30.  
2 shs Empire M. & M. Co. at 170@165 per sh.  
2 shs Empire M. & M. Co. at 170 pr ab, b 10.  
30 shs Overman at 12 per share.  
10 shs Belcher at 170@160 per foot.  
6 shs Belcher at 150 per foot h 30.  
1 sh Belcher at 155 per foot s 10.  
1 sh Belcher at 140 per foot s 30.  
25 shs Bullion at 29@30 per share.  
20 shs Confidence at 39@36 per share.  
25 shs Confidence at 37 per share.  
8 shs Gould & Curry at 400@399 per ft b 30  
20 shs Gould & Curry at 387 1/2@390 per foot.  
20 shs Gould & Curry at 380@383 per ft.  
1 sh Savage at 2250 per foot, s 30.  
14 shs Savage at 2300@2225 per foot.  
10 shs Imperial at 245@250 per share, e 90.  
28 shs Imperial at 250@260 per share.  
10 shs Imperial at 255@262 1/2 per share b 30.  
6 shs Imperial at 265 per share, b 30.  
15 shs Sierra Nevada at 6 1/2 per share.  
7 shs Yellow Jacket at 1100@1120 pr ft, b 30.

15 shs Yellow Jacket at 1090@1110 per foot.  
4 shs Crown Point at 1310 per foot.

## AFTERNOON SESSION.

6 shs Cal. Steam Nav. Co. at 65 per cent.  
4 shs Belcher at 150 per foot b 3.  
9 shs Belcher at 147 1/2@155 per foot.  
1 sh Belcher at 150 per foot b 30.  
1 sh Belcher at 155 per share s 3.  
1 sh Savage at 2290 per foot.  
25 shs Overman at 11@12 per share.  
12 shs Ophir at 232 1/2@250 per foot.  
22 shs Ophir at 235@261 per foot, b 30.  
23 shs Ophir at 250@254 per foot s 30.  
24 shs Ophir at 255 per foot s 3.  
50 shs Sierra Nevada at 6 per share.  
15 shs Sierra Nevada at 6 per share, s 3.  
12 shs Crown Point at 1300@1315 per ft s 30.  
12 shs Crown Point at 1300@1340 per ft.  
13 shs Yellow Jacket at 1110@1100 per ft.  
4 shs Yellow Jacket at 1110@1115 per ft s 10.  
1 sh Yellow Jacket at 1110 per foot s 30.  
1 sh Yellow Jacket at 1115 per ft s 3.  
1 sh Yellow Jacket at 1130 per foot h 30.  
1 sh Empire M. & M. Co. at 172 1/2 pr sh.  
6 shs Chollar-Potosi at 330 per foot.  
5 shs Chollar-Potosi at 332 1/2 per foot s 10.  
40 shs Chollar-Potosi at 332 1/2@333 pr ft s 30.  
13 shs Chollar-Potosi at 340 per foot, b 30.  
10 shs Chollar-Potosi at 342 1/2 per foot, b 30.  
1 sh Savage at 2290 per foot.  
4 shs Savage at 2290 per foot, s 30.  
10 shs Imperial at 253 1/2@260 per share.  
20 shs Imperial at 250 per share, s 30.  
10 shs Bullion at 30 per share, s 30.  
10 shs Bullion at 31 per share.  
Amount of sales.....\$244,687.00

## Thursday, April 11.

100 shs S. F. Gas Co at 67 per share s 30.  
25 shs S. F. Gas Co. at 67 per cent.  
15 shs Cal Steam Nav Co at 63@70 pr sh.  
116 shs Spring Valley Water Co at 65 p ct.  
45 shs Confidence at 36@35 1/2 per share.  
4 shs Gould & Curry at 330 per foot b 10.  
24 shs Gould & Curry at 335@375 per ft, s 30.  
8 shs Gould & Curry at 390@380 per foot.  
8 shs Belcher at 155 per foot.  
5 shs Belcher at 160 per foot b 30.  
13 shs Chollar-Potosi at 335@337 1/2, s 30.  
26 shs Chollar-Potosi at 345.50@340 pr ft.  
84 shs Ophir at 238@257.50 per foot.  
30 shs Sierra Nevada at 6@6.50 per sh.  
10 shs Empire M. & M. Co. at 167.50, s 30.  
12 shs Empire M. & M. Co. at 171@171 per sh.  
2 shs Empire M. & M. Co. at 172.50 pr sh h 30.  
1 sh Savage at 2300 per foot.  
2 shs Savage at 2300 per foot, h 5.  
5 shs Savage at 2330 per foot, b 30.  
40 shs Bullion at 31@32 per foot.  
5 shs Bullion at 31 per share s 30.  
40 shs Yellow Jacket at 1126@1100 per foot.  
1 sh Yellow Jacket at 1117 1/2 per foot, s 30.  
8 shs Yellow Jacket at 1120@1140 pr ft b 30.  
5 shs Imperial at 245 per share, c 90.  
20 shs Imperial at 259@266 per share.

## AFTERNOON SESSION.

90 shs San Francisco Gas Co at 66 pr sh.  
136 shs Spring Valley W W at 67 per ct.  
6 shs Cal Steam Nav Co at 69@71 pr sh.  
10 shs Oakland Railroad at 55 per share.  
25 shs Sierra Nevada at 6 per share.  
20 shs Overman at 9 per share b 30.  
20 shs Overman at 9.50 per share b 30.  
12 shs Chollar-Potosi at 333 per foot.  
10 shs Chollar-Potosi at 336 per foot.  
6 shs Chollar-Potosi at 340 per foot b 30.  
6 shs Chollar-Potosi at 335 per foot, s 30.  
15 shs Yellow Jacket at 1120@1100 per foot.  
11 shs Yellow Jacket at 1106@1115 pr ft, s 10.  
1 sh Yellow Jacket at 1117.50 per foot s 30.  
8 shs Crown Point at 1258@1300 per ft.  
16 shs Gould & Curry at 335@330 per foot.  
10 shs Sullion at 31 per share h 10.  
35 shs Bullion at 31 per share.  
156 shs Ophir at 263@259 per foot.  
60 shs Ophir at 250 per foot, s 30.  
50 shs Ophir at 262 per foot, b 30.  
2 shs Savage at 2320@2330 per foot.  
Amount of sales.....\$161,737.00

## Friday, April 12.

65 shs Overman at 19@19.50 per share, s 10.  
10 shs Overman at 15 per share, s 30.  
20 shs Overman at 20@19.50 per share.  
20 shs Overman at 19.50 per share b 30.  
4 shs Gould & Curry at 350 per ft, s 6.  
4 Gould & Curry at 352.50 per foot.  
4 shs Gould & Curry at 350 per foot, b 3.  
1 sh Savage at 2400 per foot.  
1 sh Cal Steam Nav Co at 72.50 per ct.  
10 shs Imperial at 257.50@258 per share.  
25 shs Imperial at 259 per share, b 6.  
20 shs S F Gas Co. at 64@65 per share.  
10 shs Confidence at 35 per share.  
6 shs Confidence at 36 per share, b 30.  
30 shs Confidence at 35 per share s 30.  
4 shs Empire M. & M. Co. at 167.50@159.  
6 shs Empire M. & M. Co. at 165 per sh, b 30.  
9 shs Empire M. & M. Co. at 164.50@161, s 3.  
24 shs Crown Point at 1325@1300 per foot.  
6 shs Chollar-Potosi at 338 per sh b 5.  
31 shs Chollar-Potosi at 330@338 per foot.  
30 shs Bullion at 30@32 per share.  
43 shs Ophir at 265 per foot, s 5.  
168 shs Ophir at 261@265 per foot.  
8 shs Belcher at 155 per foot.  
6 shs Yellow Jacket at 1120 per foot, s 30.  
6 shs Yellow Jacket at 1137.50@1135, s 10.  
2 shs Yellow Jacket at 1140 per foot b 6.  
10 shs Yellow Jacket at 1130@1140 per ft.  
\$5,000 Legal Tender Notes at 74 c.

## AFTERNOON SESSION.

120 shs S. F. Gas at 64.50 per share, s 30.  
50 shs S. F. Gas at 64 per share.  
12 shs Cal Steam Nav Co at 72.50@72.  
6 shs Cal Steam Nav Co at 72.50 per ct b 3.  
3 shs Cal S Nav Co at 72 per cent.  
2 shs Ophir at 275@257.50 per foot.  
24 shs Ophir at 275 per foot, s 10.  
12 shs Ophir at 255 per foot b 10.  
30 shs Overman at 21@20 per share.  
1 shs Empire M. & M. Co. at 162.50 pr sh.  
19 shs Empire M. & M. Co. at 162.50@161, s 30.  
4 shs Gould & Curry at 390 per foot, b 30.  
14 shs Chollar-Potosi at 337@340 pr ft.  
7 shs Belcher at 170 per share s 30.  
10 shs Belcher at 160@172.50 per foot.  
8 shs Crown Point at 1350@1355 per foot.  
5 shs Savage at 2450 per foot.  
1 sh Savage at 2440 per foot s 60.  
1 sh Savage at 2450 per foot, b 30.  
1 sh Savage at 2400 per foot.  
10 shs Imperial at 264.50@261 per share.  
5 shs Imperial at 264 per share, b 5.  
10 shs Sierra Nevada at 5 per share.  
10 shs Confidence at 35 per share, s 30.  
10 shs Bullion at 29 per share b 10.  
12 shs Yellow Jacket at 1131@1140 per foot.  
1 sh Yellow Jacket at 1150 per foot s 10.  
\$2,150 Legal Tender Notes at 73 1/2 c.  
Amount of sales.....\$177,675.00

In the above statement it will be observed that the yield of nine companies during the first quarter of 1867, as compared with the product of ten companies in the same period in 1866—including Ophir, which company reports no yield in the present year—shows a gain for 1867 of \$387,690.76. Want of space prevents us making further interesting comparisons.

The mining share market, owing to a very material advance of several stocks early in the week, became considerably excited, and sales were quite large. At the close the market is firm, and the recent advance continues to be well maintained in most shares. The developments are of an encouraging nature, and inspire great confidence as to the future yield of the Comstock vein.

HALE & NORCROSS—continues out of the market; during the week \$3,400 was bid per foot. The bullion receipts during the month of March were considerably less than in the previous months of January and February, owing to stoppage, etc.; but the yield of the first quarter of 1867, as compared with that of 1866, shows a gain of \$183,749.82. This company disburses a dividend of \$125 per foot on the 15th instant.

SAVAGE—sold at greatly improved figures, opening at \$2,175@2,190, then selling at \$2,090 ex-dividend, advancing to \$2,200@







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of March 30th: The shaft in the Geo. Washington mine was on Saturday, down 52 ft., nine ft. having been made during the week. The water has increased and but little more can be done until the pump arrives. The east drift is now in 35 ft. from the main tunnel; the rock much softer. The ledge at the bottom of the shaft is widening—the pay streak having increased one foot.

The Illinois, California Co. have got through the 500 ft. of hard granite and entered a quartzose rock full of seams, indicative of something rich ahead.

## Butte County.

The *Record* says: It is proposed to wash the bluff into the river. A three-foot sluice, capable of carrying 500 in. of water, will be laid down. If this should be successful, operations will at once be entered upon that will give employment to at least 500 men, exhaust the water of the Feather and Ophir Co's canal, and wash hundreds of otherwise comparatively useless land into the Feather river.

## Calaveras County.

West Point correspondent of the *Chronicle* of April 6th: At Enterprise Flat, one mile from town, some splendid veins of rich ore have been developed. On this flat is located the celebrated Gouldsen mine. Mr. Gouldsen has, by drifting, discovered large bodies of rich ore on each end of the old works, and has out now ore that will yield twice as much as was taken from the mine last season. Willis and Johnson are now mining splendid ore. A few tons crushed a few weeks since yielded near \$100 per ton. The Torch Light, owned by Briggs, Everhardt & Co., is yielding good ore. On the same range, is a good mine owned by Jeff. Wilson & Co. Ore recently crushed from this mine yielded over \$100 per ton.

Messrs. Harvey & Hawk, formerly of Volcano, are working the Zacatara mine, on contract, and have out a large quantity of splendid ore. At Cator, three miles east of town, Congdon & Mocher have a good lead and have out a large amount of rich ore; so also have Keys & Postens, in the same vicinity. Mr. Bougliuval, owner of the Oro Plata mine, is prosecuting work vigorously. Morris & Co. are proposing to wash the tailings from the Mina Rica mill by a new process, recently invented by Mr. Morris.

Camanche letter to same: Since the prospect of water at Cat camp, 200 claims have been taken up and recorded. Miller & Co. have found the richest prospects thus far. J. Zimmermen & Co. have washed out, by panning, from \$4 to \$5 per day. Coburn & Travis have a claim from which, with a rocker, they take from \$10 to \$15 per day. There are from day to day from 20 to 30 men prospecting, and many have been equally lucky. There are now in operation over 100 rockers, run by Chinamen, on this ground, which is over four miles square, every foot of which contains gold. It is common to obtain ten cents per pan, and from that up to \$27.

## El Dorado County.

Kelsey correspondent of the *Placerville Courier* says the Bald Eagle is rich and all right, but the owners are still in a muddle.

From the *Democrat* of April 6th: A company of gentlemen from Sacramento county have located two quartz claims on Hangtown Creek, a short distance below Middletown, in the Placerville mining district. The Crook's ledge is on the north side of the creek, the Howe ledge on the south side—3,000 feet in each claim. The ledges at the depth of 12 ft. are three ft. thick. Specimens taken from them at this depth show plenty of free gold, and the sulphurets are filled with it.

## Kern County.

From the *Havilah Courier* of March 30th: At the last clean-up of the Belmont mine, Washington Dist., worked by Lyons, White, Law and others, 18 tons of rock yielded \$1,910—besides \$300 or \$400 left in the arastra. There is plenty more of such rock in the Belmont.

## Los Angeles County.

From the *News* of April 2d: Dryden & Hahn have discovered a rich extensive vein of ore on the ranch of the Sisters of Charity, 16 miles from this city. The vein is over 1,000 yards long, with an average width of 15 ft. long; an assay reveals 75 per cent. of pure metal. The discovery is the more important from the fact that there is an extensive coal mine within 50 miles. The ore can be laid down in San Francisco for \$14.50 per ton.

## Mariposa County.

From the *Gazette* of April 6th: William Brown found in Greaser Gulch, the other day, a piece of gold weighing 51 ozs. and \$3. The same claim has been paying for the last month from \$4 to \$8 per day.

Hogan & Co., who are working the adjoining claim to Brown, have taken out \$500 in the last month.

The mining region about the town of Indian Gulch, near Greaser, is as good, if not better, than any other in the State, for the reason that there has never been water for a sufficient length of time to work out a single claim.

Coulterville letter to the *Mail*, April 6th: Capt. J. M. Aiken is the owner of one of the most promising ledges in this vicinity. It lies about three miles southeast of this place, and from the vein it is of easy grade to the Merced river. The mine, I understand, is in market.

Messrs. Coward & Ralston design erecting machinery in the summer on the Marble Spring property.

Much energy is being exhibited in the Bull Creek region in mining, but no results need be expected before summer.

In the case of the Mariposa Co. vs. Dodge Bros., the Supreme Court has granted an injunction restraining them from selling or intermeddling with the property, and appointed a Receiver.

## Nevada County.

From the *Gazette* of April 4th: The 15-stamp mill of the Lucky Co. crushes 30 tons every 24 hours, at an average yield of \$20. The incline is down 275 ft., and the vein 2½ ft. wide.

Same of 5th: A large and promising quartz ledge was discovered a few days ago, by the Kelsey Bros., east of and parallel with the Banner. A working test gave \$30 a ton.

Work in the Allison Ranch mine will be resumed in about two months. The company is now working over and grinding in pans the tailings which have been accumulating for some years, and of which they have several thousand tons on hand. The tailings are paying about \$15 a ton, and besides are yielding nearly as large a proportion of sulphurets as when first worked.

Same of 8th: We have conceded the quartz mines, in the past to Grass Valley, but the evidences are plain that Nevada will dispute the palm with her sister town, at no very distant day. Our quartz mines are showing splendidly. The Wigham, the Banner, the Norridgecock, the Cunningham, the Sneath & Clay, and the Union, are among the best mines in the county. If 19 out of 20 of the quartz ledges about Nevada shall fail, the future prosperity of the section is assured.

Same of 9th: Merrow, Cobb & Co., hydraulic miners at Scotch Flat, cleaned up on Saturday last, after a run of 11 days, the yield being \$2,540. This is at the rate of over \$200 a day, and is more than double the yield of former clean-ups.

Same of 10th: The Golden Gate Co. at North San Juan, cleaned up on Sunday last, after a run of 14 days, taking out \$6,000. These claims have not been paying very well heretofore, but the owners feel much encouraged by their late run.

From the *Transcript* of April 5th: A rich ledge was discovered on Wednesday last, in Deer Creek, about a mile and a half below town, in Leeth & Co's gravel claims. The rock is filled with rich sulphurets, and the ledge is compact, and is about three feet wide.

The Amazon, on the ridge beyond the Star Spangled Banner, has been opened to the depth of 90 ft., and gives evidence of richness, though none of the rock has yet been worked.

Same of 10th: On the Birchville ledge, a tunnel has been run in 100 ft., and the ledge tapped 60 ft. below the surface, is three feet wide. In a month 45 tons of excellent rock were taken out. A working test, made in a hand mortar, yielded at the rate of \$500 per ton.

The mines at Birchville are yielding handsomely. Last week the San Joaquin Company, after a run of twenty-four days cleaned up \$17,000. The Kennebec Company, after a run of twelve days cleaned up \$7,000. Other hydraulic claims are also paying well.

A company has been formed to develop the ledge on Albion Hill.

Spenceville, which was almost deserted after the copper excitement subsided, is looking up again.

From the Grass Valley *Union*: At a distance of thirty-seven feet from the southern boundary of the Lone the Union Jack, at a perpendicular depth from the surface of eighty feet, shows a ledge about six feet in width, the rock by mill process having paid \$16 a ton, the expenses of extracting and crushing being but \$8 a ton.

The owners of the La Crosse mine have recently perfected arrangements with San

Francisco parties for the erection of hoisting and pumping machinery, which, by the terms of the contract, is to be running by the first day of June next.

EXCELSIOR.—From the Nevada Meadow Lake *Sun* of April 6th: As the Mohawk and Montreal companies proceed downward with their shaft, on the second level of their mine, the ore seems to increase in quantity and richness.

From the Territorial *Enterprise* of April 7th: We saw a quantity of excellent looking ore from the Mohawk and Montreal mine, Excelsior District, four assays of which, made by different assayers in this city, yielded at the rate of \$65 to the ton. The mill is nearly completed and will start into full operation about the first of next month.

## Placer County.

From the *Stars and Stripes* of April 3d: The Golden Gate adjoins the Dewey claim, at Bath, and is owned by Henry Ford, John D. Jones, and three brothers named Willetts. Unlike the Dewey, the Golden Gate is a bedrock claim. The company have a convenient mill near the mouth of their tunnel which runs five stamps and works night and day. The Golden Gate employs about 15 men, and regularly nets to its owners from \$250 to \$300 each, per month. The tunnel is about 1,100 ft.

Colfax letter to the *Dutch Flat Enquirer* of April 6th: The Mountain View claim, Cape Horn, has a vein from three to five ft. wide. It prospects well. The Lone Star is worked by one man, who, alone, has sunk a 65-ft. shaft. The Colfax lode is being worked night and day.

## Plumas County.

From the Quincy *Union* of March 30th: McGee & Thompson, who have been at work day and night for seven months, running a tunnel on the Mammoth ledge, struck through last week at 1,700 ft. The rock is rich. The vein is four ft. wide. The Eureka (Parrott & Co., San Francisco) has out 400 tons of good rock.

## Shasta County.

From the *Courier* of April 5th: Last week, Hunter & Mozier, at Church Hill, cleaned up \$500 from a 10 days' run. The workmen on the Highland lode, at French Gulch, are taking out some very rich rock.

At South Fork work has been resumed on the Crystal lode, and fine prospects obtained. A controlling interest in the Pacific has been sold for \$1,200.

At Dog Creek times are quite lively. The McCall Gulch claim pays \$50 per day. On Saturday, the proprietors took out two specimens—one weighing 12 and the other 3½ ozs. Pieces weighing from \$3 to \$5 are found in this claim almost daily. Baylis & Myers have struck a rich pay streak in their claim on Sailor Point. Robert Pitt is working a claim on Portuguese Flat, eight miles above here, which pays from \$8 to \$10 per day to the hand. Mason has lately struck a quartz ledge on the South Fork of Dog Creek, which prospects over \$1,000 to the ton.

## Sierra County.

From the Downieville *Messenger* of April 6th: We learn that the Keystone mill recently cleaned up \$10,000, after a run of six weeks. A Chinese company have commenced mining operations in the river below town by putting in a wing dam. The Blue Nose Tunnel claims, on the divide between Nelson and Hopkins' Creek, have struck good pay—nine car loads paying \$30. The Monumental claims, at Potosi, recently reached "pay dirt" that prospected from \$10 to \$14 to the pan.

## Siskiyou County.

From the Yreka *Union* of March 30th: Geo. Scoles cleaned up, last week, at the rate of \$65 to the ton. Hall's claim in the gulch is paying very well. The claim owned by Mortimer & Scott is paying about one-half ounce per day to the hand.

From the *Journal*: The miners at Sawyer's Bar and on Salmon river are doing better this season than since 1856. The quartz leads and placer diggings are paying extraordinarily well. The Black Bear company is taking out a great quantity of rock, which pays exceedingly rich.

## Tulame County.

From the Sonoma *Herald*: The Wyoming claim, belonging to the Haskell Bros., of Shaw's Flat, had crushed 15½ tons of rock, which yielded \$114 per ton.

## Yuba County.

From the North *Californian* of April 9th: The shaft of the Blue Point Co. is down 16 ft. Last week the Blue Gravel Co. put off a blast in which 300 kegs of powder were used. It is described as having, to appearance, raised the mountain some feet.

Camptouville letter to the *Appeal* of April 2d: The True Grit Co. have struck very soft rock. Griffiths & Co., at Kentucky Hill, have struck gravel. Work on the Fiddletown ledge is progressing nicely. Operations upon the copper claim of McKim &

Newhery will be commenced again in a short time.

## ARIZONA.

From the *Miner* of March 9th: The Sterling mine is doing well. The difficulties heretofore experienced in amalgamating are gradually being overcome. The Aztlan mill of 10 stamps, lately erected on the Umpqua lode by Noyes & Curtis, is one of the first class.

Letter from Hardyville to same says: B. H. Coit has arrived, with the purpose of working his mine, the Pride of the Pines, in Waba Yuma District.

H. H. Moore, just returned from Arizona, writes thus to the *Alta* of April 7th: The Vulture lode, opened four years since by Henry Wickenburg, paid, for two years, with arastras, an average of \$100 per ton. Since it has been worked with more elaborate machinery, it has averaged \$70 per ton. A large new mill is to be erected. The gold is free. Some Montana miners are reported to have discovered a vein of the same kind 25 miles east of Wickenburg. The other prominent gold quartz leads found north of the Gila, are nearly all situated within a circuit of 30 miles from Prescott. The veins upon Lynx Creek, 14 miles east of Prescott, are the most numerous, if not the richest, to be found in Arizona. The most worked of any being the Accidental, owned by Bowers and others, of Prescott, who have prospected it with results amounting to about \$100 a ton, by means of a two-stamp mill. K. S. Woolsey has lately completed a five-stamp mill, to run by water-power on the Agua Fria, a branch of the River Verde, about 25 miles east of Prescott. The Colonel is working rock in the mill from the very rich leads known as the Ticonderoga, Green Tree, and others discovered and owned principally by him. He is also setting up one of the Thunderbolt crushers near these leads, intending to give that machine a fair trial in comparison with stamp mills. The mill of the Moss company, on the east bank of the Colorado, about a mile above Hardy's, is one of the most complete in the Territory. It only awaits the arrival of Mr. Strong, the superintendent, to commence running. \* \* \* \* \*

The dry washing process, practiced principally by Mexican gambusinos, produces in the aggregate no considerable amount of gold. Copper and silver are also mined for by these gambusinos, and sometimes with results astonishing to the white miner. Machines for dry washing have lately been taken to Arizona, many portions of which contain the richest placers, without water near them, and especially adapted to that mode of working. As these machines are not costly, and may be packed about upon mules, they are likely, if of the right kind, to prove profitable to those introducing them.

The average yield of gold from all parts of Arizona, in the aggregate, may be estimated at the present time to be from \$4,000 to \$5,000 a day. That of the other metals cannot be easily estimated. But in the course of the present year, a considerable increase in the yield of gold and of all the other metals found in the Territory may be confidently predicted.

## COLORADO.

From the Denver *News* of March 13th: Some very fine specimens of argentiferous and gold-bearing galena, from the Lamberston & Warren lode, on Nevada Hill, were shown us the other day.

From the same of March 20th: Boulder county is looking up. Ward, James, and St. Vrain's Districts will contain a great number of miners the coming season.

More placer or gulch diggings will be worked this year than there has been since 1860. Development of lodes discovered within the past two years will be carried on with vigor.

From the Colorado *Times* of March 12th: The Smith & Parmelee Co. are now sinking their pump-shaft, and propose to drain the entire property on the Briggs and Gregory lodes.

We saw this morning a gold retort weighing over 122 ozs., the result of last week's run of Alps & Grenada Co's 12-stamp mill on six cords of ore; and another of 156 ozs. from the Gunnell Co's mill.

Letters have been received from various parties now in the East, expressing their determination to come out in the spring, with capital and machinery, to develop the silver wealth of Griffith Dist., Georgetown and surroundings.

Same of 15th: A private letter from a Colorado man in New York, says: "Prof. Hill is back from Europe. He reports the complete success of Herman's process; says he is now fully satisfied. The ore from the Brastow Co's mine, (Bobtail lode) yields in coin \$251.40 per ton. There were 80 tons in all. The Fiske ore yielded at the rate of 110 ozs. per ton." It must be remembered



that the "Fiske" is one of our refractory ores and did not pay in stamp mills.

Same of 19th: Mr. J. T. Herrick had a handsome silver "slug" in his hand here yesterday, which weighed 8½ ozs. and was taken out of only six lbs. of the ore from the Anglo Saxon ledge, Georgetown Dist.

A retort weighing over 134 ozs., was the product of the Leavenworth 12-stamp mill for the last six days.

For the week ending March 12th, the Black Hawk took out 225 ozs.; Smith & Parnell, 75 ozs.; Kimber's mill, for W. H. Cushman, 68 ozs.; Ophir Co., 62 ozs.; Sensioner, 140 ozs.; Mr. Keith, 90 ozs.; Consolidated Gregory not yet reported.

#### IDAHO.

From the *World* of March 23d: We are informed that the ditches all about here are nearly ready for the mining season, and that the water will be turned into them, as quickly as the miners are ready for working their claims.

A. Cave writes his brother at Idaho City from Leesburg, Leuihi, Feb. 22d, as follows: This place is rapidly filling up with people, and I suppose there is a good deal of excitement about these mines on the outside. It may be a good mining camp, and I hope it is; although those who have been here the longest and ought to know the best have but little faith in it. There is a pretty large extent of country located, and I think that some of the recorders will make more money than the locators.

Large crowds are leaving Virginia City and Helena, Montana, for the Salmon River diggings. It is said that food is scarce at the diggings.

The *Lewiston Journal* of March 20th, says: We learn that the copper ore of the Eagle Creek country is found to be easily worked and reduced, and that the steamers are ready to contract to ship it from Wallula to Portland for \$20 per ton. Preparations are being made on a large scale to mine this copper.

From the *Owyhee Avalanche* of March 30th: A. J. Sands & Co. are to work the Oro Fino mine jointly with the O. F. & M. S. company. During the week the snow was removed, and the ledge found some distance south of the discovery shaft. Fine gold was found in some of the rock taken therefrom.

We have it from a source entitled to credit, that a heavy company has been organized in New York with a view to prospect for mines in Owyhee, and will early in the summer commence operations.

Two Iowa companies will soon commence work in this Dist. extensively; the New York and Owyhee company will largely increase its labor soon; the Cosmos is adding to its list of workmen, and the Oro Fino and Morning Star company will require a heavy force within a month. We only mention the certain operations, while there is the best of reason to believe that double the labor will be needed that we have indicated. The news from Flint is of the most cheering character.

A letter to same from Rocky Bar, Alturas county, gives these items: The Waddingham and Idaho mills are still running, and doing well. The Idaho company are taking out extraordinarily rich rock. Big stories are told of their two last clean-ups. At Red Warrior the mills are all silent—not from the want of rock, but on account of the manner in which companies operating there have been managed. Mr. Howard has got out 200 tons of good rock from the New York ledge. Marx & Van Wyck are pushing their work on the Bonaparte ledges, and have flattering prospects. At the Yuba a great deal of work has been done. Wm. Johnson has struck the Minerva, and it is a wide, rich ledge.

Stevens, Taggart & Co. have a tunnel in on their ledge, the Grey Eagle, and have a shaft some 40 ft. deep; where the tunnel strikes it the ledge is over 10 ft. wide, and yields extraordinary prospects.

Col. O'Neil, now in San Francisco, will start in the spring with a 20-stamp mill for Yuba.

Mr. Matthew Graham has been developing the Eclipse, Lucy Phillips, Atlanta and Silver Tide.

The Greenback company, (Defrees Co.) have got out 500 tons from M. C. Berge's claim on the Atlanta. The shaft is down about 40 ft.; ledge over 20 ft. wide.

#### MONTANA.

From the *Post* of March 23d: The Hawk-eye mill was only run a portion of the week. Col. Postlewaite, yesterday, deposited 143½ ozs. of retort, valued at \$2,583.

We noticed yesterday, a very fine retort, the first product of the Christmought mill, which is said to work beautifully. The erection of the machinery is not yet fully completed, and no regular run had been made; but such rock as they have crushed from the Oro Cache, has yielded fully \$100 to the ton.

On the shaft of the Ore Cache No. 2, from which ore is now being taken, there is a well defined crevice of three ft. In addition to this, the company have been running a tunnel to tap the General Grant lode, which they have struck at 150 ft. At latest advices they had penetrated the vein nearly eight ft. and had not yet worked through it. The quartz is said to be of excellent quality.

Letter to same from Rabbit Dist., has the following: Miles Cavanaugh has a shaft on the Valley lode some 25 ft. in depth, with a splendid body of quartz. Mathiuss and Powers have commenced a shaft on discovery claim of the Watseka. At a depth of 10 ft. they have a 15-in. crevice of solid brown iron quartz—and very rich, almost every piece showing gold visible to the naked eye.

Letter from Butte City, March 7th: This new promise to be a good camp. It has lodes of inestimable richness. There is almost an unlimited amount of side hill placer mines below the ditches that are now nearly completed. Everything relating to these claims is, of course, "on the square." There is not a very large portion of the miners here that have got over 30 or 40 claims each.

Helena items: Mr. Deidesheimer, Superintendent of the St. Louis & Montana Mining Co., informs us that the works are fully prepared to turn out silver by the ton, as soon as the weather moderates. It seems rather sanguine to speak about turning out a ton of silver every fortnight, but the figures warrant it. The rock yields on an average, \$320 per ton. The capacity of the works is ten tons per day, yielding \$2,976; in fourteen days, \$41,664. Rating the silver at \$16.30 per lb., the yield in fourteen days would be 2,566 lbs., leaving a large margin for contingencies.

Three tons of Legal Tender ore gave a 70-lb. button worth \$1,141, a day or two since.

#### NEW MEXICO.

From the *Wilmington Journal* of March 30th: The Pinos Altos Mining Co., consisting of Messrs. Masten, Jones, Amberg, Reynolds and Griggs, have just erected a 15-stamp mill at Pinos Altos, 200 miles east of Tucson, and 100 miles west from the Rio Grande. They are now about commencing crushing rock (gold bearing quartz). Their ledges are said to be very rich in gold and silver; and have been worked with good results by the arrastra process. Other mills are to be put up in the Pinos Altos Dist. this summer.

#### NEVADA.

##### Black Rock.

The *Marystown Appeal* of 6th inst., says: We were shown yesterday at the assay office of Knight & Co., a silver bar, the product of a mine in the Black Rock Dist., which is the property of Judge Harvey, now a resident of this city.

##### Esmeralda.

From the *Aurora Union* of March 30th: The confidence in the mineral resources of this county which was almost destroyed by reckless speculation in "wild cat" in 1863, is being gradually restored. Winters & Co. have developed the Juniata lode to a considerable depth, and find it well-defined and large. From Pine Grove and other outside districts, we expect during the coming summer to realize a handsome revenue.

Henry K. Mitchell, a Virginia City prospector at Pine Grove, Walker River, gives the *Trepass* of April 1st, these items from Wilson's Dist.: Fifteen tons of ore daily, are now being taken from near the surface on Wilson's ledge. It is worked at Todman & Co's new 10-stamp mill, and averages \$40 per ton. Work is being prosecuted on the Midas tunnel night and day. It is in 200 ft. On the claim of the Reese River Co., half a mile north, the shaft is 30 ft. deep. The vein is from six to ten ft. wide. Next comes the Imperial. Next the Wheeler. On this the ore is being worked in arrastras, and averages \$50 per ton.

The same writes thus of Washington Dist.: Messrs. Todman, Cheever & Co. own four ledges half a mile from the river. A tunnel running diagonally into the precipitous hill side, will in a distance of 500 ft. cut all four of these ledges at a depth of 300 ft. below the croppings. It is to be commenced in a few days. The ore a few feet from the surface shows chloride of silver. Southwest of these ledges is a mammoth lode, named the American Eagle—an extension of the Sea Fowl lode—which has been opened on the surface 25 ft. in width, and five ft. in depth. A quantity of the ore in Cheever & Todman's mill, returned \$4.15 in silver per ton. With proper appliances for reduction it is believed that the ore will yield double that sum. The mine will be prospected thoroughly this summer.

The Gold Hill *News* of April 2d, says: A Swede, named Sanders, who keeps a store at Pine Grove, Wilson Dist., Walker River, came to Gold Hill this morning, bringing with him some ore, which he submitted to

an assayer, and found to be silver ore, worth \$32 per ton. Mr. Sanders says that the ledge from which this ore was taken is not less than 50 ft. wide, near the surface; and the prospectors were about to abandon it because they could find no gold in the rock.

##### Humboldt.

From the *Register* of March 30th: On the Goleonda, White & Webb are now down over 125 ft. with their shaft. At this depth they find a well defined 10-ft. vein of solid ore. They have a mine of incalculable value.

A company in Pueblo Dist., intend to purchase the old Webber mill at Oreana, which is now idle, having been superseded by the furnaces. We understand they have a very large and valuable mine, and have now outside 400 tons of ore, with unlimited quantities in sight of a very fine quality.

A. W. Nason shipped from the Montezuma, by Wells, Fargo & Co's Express, 2,836 ozs. of bullion, the value of which is \$3,415.70.

A party of prospectors intend to explore the country about Gravelly Ford, on the Humboldt river, and that lying between Paradise Valley and the Goose Creek range of mountains. They will start as soon as the weather permits.

Letter to same from Star City, says: The American Basin Co. has just put on an extra force of hands and will crowd its work as fast as possible. The Yankee is driving ahead as usual; so is the Almira. I learn the De Soto Co. will resume work soon. The Little Giant just across the mountain, in Santa Clara Dist., is looking well. McBeth has a tunnel in 130 ft. and is highly elated with his prospects.

The Virginia *Trepass* has seen a private letter from Lake City, Surprise Valley, 160 miles north of Virginia, in which appears this item: Yesterday news was received in town that some marvellously rich placer diggings were discovered on the 13th of March, at the head of Pitt river, about 20 miles from here. Several pieces of gold have been dug which were worth \$20 each, and quite an excitement prevails relative to the matter. The gold is very fine, and a number of men have already left for the reported new diggings, and more are about to leave.

The Forty-Nine lead on the east side of Surprise Valley, is creating some excitement among the settlers. It is supposed to be rich in silver. So says the *Enterprise*.

##### Pahranaagat.

The Salt Lake *Vedette* gives the following items from Mr. Wm. H. Henry: Dr. Congar, after erecting smelting works at Logan Springs, found the character of the ore below the surface so changed as to require a mill in addition. He is now erecting it. The mill of the Pioneer Co., represented by Mr. Raymond, is located 12 miles from the mines, for the sake of water. Nichols & Kennedy have a vein of water in Silver Cañon which flows 1,000 gallons per day.

The Crescent Co., represented by Mr. Julius A. Bidwell, are pushing forward the development of their mine with vigor, and are also making preparations for their mill at the Hatfield Ranch, where abundance of water has been obtained at a trifling expense, and only about one mile from their mine. There are three tunnels on the Illinois. In one of these, a small vein of silver ore, of rather rebellious character, has been struck. A shaft is being sunk in the Webster, and some prospecting being done on the Virginia Silver, both of which carry very rich ore at the surface. On the Cincinnati, and Ely & Sanderson, work for the present has been suspended. I visited the wonderful List lode. It has remarkably bold, and continuous outcroppings, and not an indication of another lode is found within a mile of it in any direction. It is, undoubtedly, second to none in richness. Dr. Congar has taken out at least \$50,000 worth of ore, ready for crushing. Shares are now held at \$500 per foot. This district has, in my opinion, a bright future.

"S. A. R." writes the same from Hyko, March 15th: "In this district the mines are in the very best possible position for saving labor; deep cañons are natural shafts from which tunnels can be run to great advantage, thus doing away with sinking shafts and expensive hoisting apparatus. I think they will be worked as cheaply as any mines in the State."

"One mill has been erected for prospecting purposes; three more are on the ground ready to be erected as soon as building materials can be procured, with the prospect of having four more here before July, making in all 100 stamps."

##### Reese River.

From the *Reveille* of March 28th: The store, yesterday, brought 3,000 ozs. of crude bullion from the mill of the Social and Step-toe Co., at Eagan Cañon. Eighteen tons of ore from the Taylor & Passmore mine, Cor-

tez Dist., was delivered yesterday at the Knickerbocker mill for reduction.

We have just heard from Cortez Dist. The stratum of pay ore in the Cortez Giant, at the point of excavation, is from 16 to 18 ft. thick. As soon as the snow disappears, work will be commenced on the St. Louis and Nebraska.

Same of 29th: "Ned" writes us from Mammoth, that Capt. Knapp will resume work on the great shaft of the Mount Vernon, by the 1st of next month. J. C. Merrill has commenced a shaft to ent the Albany 100 ft. below the surface. The Tyler Bros. have struck a good vein of mineral in the Sunlight. Ferguson & Co. are putting down the shaft in the American Flag.

At Belmont work is being prosecuted on the Silver Champion. The Silver Cord increases in width.

Same of April 2d: Matters are quiet at Silver Peak on account of the deep snow. Four bars, valued at \$3,687, came in last night from the mill of the Twin River Co. The Knickerbocker mill sent in for assay 1,540 ozs. of bullion.

Same of April 3d: Five bars, worth \$4,673, came in last night from the mill of the Twin River Co.

Same of 4th: Eight and a half tons of chloride ore from the Magnolia, sent to the Keystone mill for reduction, yielded \$3,486.

The Rigby mill at San Antonio was put in motion last week.

Eighteen tons of Taylor & Passmore rock averaged over \$200 per ton.

Same of 5th: Eight bars, worth \$7,794, came in to-day from the Buell mill at Belmont.

Mr. Seitz has taken out of the Liberty mine, San Antonio Dist., 100 tons of ore, of which 60 tons is first class ore, yielding \$270 per ton; the second class will yield from \$100 to \$125. The Rigby mill hauls and works the rock at the rate of \$75 per ton. This mill has two large stamps, and is 14 miles from the mine.

The Virginia *Enterprise* of April 3d says: Of all the outside localities talked of at the present time, Silver Bend seems to be the favorite. Several parties have already left here, and others are leaving almost daily, for that new land of promise, where every ledge is pregnant with bullion, the boulders are black with rich sulphurets, and everything that glitters is gold and silver.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Virginia *Enterprise* of April 4th: "All the workmen who have been employed in the upper works of the Gould & Curry mine have been discharged, all paying ore having been extracted from the upper levels. The only work now being done is upon the main shaft, and this is being done by contract. The shaft is now down about 900 ft., and is being constructed in the best style in every respect. Once it has attained the intended depth drifts will be started to open new levels. In the meantime the mill will do custom work. So much for mismanagement in early times. The shaft that is now being sunk should have been commenced four or five years ago—this would have been better than building fancy duck ponds."

The Chollar-Potosi is yielding about 300 tons per day of excellent ore with plenty more of the same sort in sight. Quite a number of mills are kept constantly at work upon ore from this mine.

The water is being raised at a lively rate from the Sierra Nevada mine.

Same of 6th: The famous Yellow Jacket mine is yielding an unusual amount of rich ore at the present time. The Kentuck and Crown Point mines are also yielding splendidly. So is the Imperial. We saw a brick from the last named, worth \$7,514 yesterday; and twelve others, all from the Imperial ore, worth in the aggregate, \$54,000.

Same of 7th: The Hale & Norcross mine will yield no more ore for a week or ten days, we understand, as hoisting has to be suspended in order to make certain necessary repairs to the old shaft. The sinking of the new shaft will still progress as before.

From the Gold Hill *News* of April 3d: The Gould & Curry will, no doubt, when it attains sufficient depth, find the same body of ore that the Savage Co. are now working upon.

A new system of small coinage is now under consideration by the Government, with prospect of being adopted for future coins. The plan consists in having upon the center of the one-cent pieces a raised star, the nucleus of which is represented by a hole through the coin; the two-cent coins are to have two perforated stars, the three-cent coins, three.



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

C. W. M. SMITH. W. B. EWER. A. T. DEWEY.  
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**American and Foreign Patents.**—Letters Patent for Inventions can be secured in the United States and foreign countries through the Mining and Scientific Press Patent Agency. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## Canvassing Agents.

Our friends can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 15th, 1866.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1865.

Mr. E. L. Smith is a duly authorized Agent for this paper, February 25, 1867.

Mr. Geo. P. Fitts is a duly authorized agent for the Mining and Scientific Press at San Francisco, March 23, 1867.

Mr. J. M. Quay will act as agent for the Mining and Scientific Press from this date. March 23, 1867. N

## San Francisco:

Saturday Morning, April 13, 1867.

## Notices to Correspondents.

N. R.—The word "CHEMIST" has usually been assigned by lexicographers as being derived from Greek roots, signifying juice, and to melt; others consider that it originated from the Arabic word *kema* (black); the latter is probably the correct view. Chemistry and chemist may be clearly traced as the abbreviations of alchemy and alchemist, "al" being the Arabian word equivalent to the English article "the"—as Al-Koran, Al-Boruck, etc., etc. It forms some corroboration of the view just given that alchemy and alchemists were the terms applied to the profession and professors of what was termed the "Black Art," during the Dark and Middle Ages. To Hermes Trimegistus, said to have lived A. M. 2076, has sometimes been assigned the eminence of being the first alchemist. His *Tractus Auricus*, or Golden Work, is, however, a farago of nonsense, and bears internal traces of having been compiled during the fifteenth and sixteenth centuries. Geber, an Arabian, is the first authentic professor of chemistry or alchemy, whose works have been handed down to us. Geber probably flourished somewhere between the fifth and seventh centuries of the Christian era. Alembics, crucibles, furnaces, and other ingenious apparatus, were described and depicted in his manuscripts, many of which, it has been supposed, he invented. Using the far-fetched, metaphorical language, so characteristic of the writers on alchemy, Geber writes: "Bring me the six lepers, that I may cleanse them;" by which he means the transmutation of silver, mercury, copper, iron, tin and lead, (the only metals then known) into gold. Dr. Johnson supposed that the word "gibberish," formerly spelled "geberish," is derived from this celebrated Arabian. Notwithstanding the hyperbole and metaphor employed by this writer, chemistry is indebted to him for much, as he certainly gave the initiative to all who succeeded him.

M. W.—We do not know of any rotary engine of large dimensions, in regular use. Probably thousands of smaller ones have been made, but they have generally been thrown aside as of little value. Probably not less than one hundred such engines have been illustrated in the *Scientific American*. The illustrated Patent Office reports will give you a very good idea of the efforts that have been made in that direction, and the various devices by which it has been attempted to use steam without a reciprocating motion.

G. P.—VIRGINIA CITY.—VANADIUM, commercially speaking, is a rare substance, though in some cases it is said to be most extensively diffused—thus, it is said, that it can be found throughout the whole mass of the London clay formation; though so sparsely that it can only be chemically detected. The chief source of supply is obtained from the vanadate of lead, found at Wanloch-head, Scotland, and at Zempán, Mexico. It is also and was first found by Seftstrom, in the year 1830, who discovered it in the ores of iron obtained at Taberg, in Sweden, and also in the slags of the reducing furnaces. Seftstrom gave to this metal the title of Vanadium, from Vanadis, a Scandinavian deity.

"Ye land o' cakes an' brither Scots,  
Frae Maiden Kirk to John O'Gaunt's—  
I rede ye 'tent it—  
There's a chiel amang ye takin' notes,—  
An' faith he'll prent 'em!"  
BURNS.

We give the above motto by way of warning to a large part of the California public, that our shortcomings in the way of colloquial terms, used in mining and the cognate sciences, do not pass uncriticized, reserving a proper share of said "warning" for our own editorial *lupus penna*.

In another column will be found a communication from Mr. Arents, in reference to our remarks made on a communication from him, which appeared in our issue of Jan. 19th, in reference to what he claims to be a new mineral. The letter contains many very judicious remarks which may be read with much advantage by our mining community generally, especially those parts which animadvert so justly on the loose, unmeaning and slipshod manner in which miners apply and use terms and phrases. The letter, however, contains some remarks which we think smack a little of the hypercritical, and others which, if adopted, would be found over-scientific for the general reader. As an instance of the first, we may mention that Mr. Arents lays it down as an axiom that a mineral is any substance in inorganic nature which has a homogeneous structure, certain uniform physical properties and a fixed chemical composition. Such may, and we are willing to admit is the meaning of the term when applied to strictly mineralogical classification; but by the mass of newspaper readers, very few of whom are mineralogists, the word mineral has a much wider significance, and we cannot therefore agree with the assertion of that gentleman that "the term (mineral) therefore excludes all mere mechanical compounds and only refers to substances which conform to some distinct chemical formula." Clay, sand, loam, etc., etc., are mineral substances which have no distinct chemical formula, and the mechanical admixture of all three, or less, in any and every proportion, pertain to the mineral kingdom. Coal is a general mineral term for substances varying from almost pure carbon to varieties containing more or less hydrogen up to bog-head cannell.

Rock, says Mr. A., quoting from Dana, in a strictly geological point of view includes not only the solidified compact portions of the earth, but also such soft or incoherent materials as clay, sand, gravel, etc., etc. In writing, however, for the million such precision is not fitting, and would not unfrequently be pedantic. To confine the meaning of terms to strictly scientific limits, a journalist, therefore, often feels himself occasionally, though reluctantly, compelled to employ words and phrases in the vulgar and more extended sense. In fact, geologists have, by admitting such terms as Oxford and London clays, Green and Hastings sands, etc., etc., fully recognized the advisability and advantage of employing terms eminently descriptive to ordinary minds, of the special physical characteristics of those "rocks." The term rock, however, as limited to its strict geological definition, is only an introduction of very recent date, and has not become entirely familiarized to even very old living geologists, and, as may be conceived, much less so by the bulk of persons who have not made that science a specialty. Having, as we think, said sufficient to show that even a "scientific journal" is not unfrequently justified in deviating, occasionally, from employing or applying scientific terms, in a strictly technical manner, we will now notice what appears to be Mr. A.'s principal complaint, which he states as follows:

"In my article on Partzite it was not my intention to give a description of the Blind Spring ores. What I intended, and did, was to describe a certain mineral, one certain homogeneous body which I found among these ores; and so long as it is not shown that this same mineral has heretofore been examined and described, and so long as no analysis of a mineral can be produced which corresponds to the formula established for

the Partzite, the latter is unquestionably to be recognized as a new mineral. It matters not if the same mineral occurs in other mining localities, and if years ago silver has been reduced from it."

We concur in the claim made by Mr. Arents in the above quotation; but at the same time Mr. A. will discover, on referring to our remarks of the 9th February, that whilst he alluded only to selected, and, as we are led to infer from his last communication, somewhat rare specimens, the mineral alluded to in the article published by us was an analysis of an ordinary specimen, apparently representing the bulk of the vein, which we happened to have in our possession at the time. The examination of that specimen, and the partial analysis by our friend, added to our previous knowledge of it, appeared to fully justify the conclusion that the main portion of the mineral consists, as described in our article of Feb. 9th, of a silico-carbonate, metamorphosed from a sulphurated ore. The specimens which accompanied the letter that we give to-day, do not appear to differ essentially from that on which the above opinion was founded.

One word with reference to the "analysis" which we obtained from our friend. The gentleman who made that examination is now at the East, and cannot answer the call of our correspondent. We knew that he had previously analyzed the mineral carefully—a work for which he is in every way competent; and we requested him to merely make such an examination of the specimen in our possession as to enable him to verify its identity with those which he had previously examined. It was not at all essential to the purpose in view, that such analysis should be complete. If Mr. Arents will send us by mail about half an ounce of the mineral which he calls Partzite, we will promise him a faithful analysis of the same, and an opinion as to whether or not it is a new mineral, from a party every way competent to the determination, and whose name shall accompany the report of the analysis.

**DIFFICULTIES IN CHLORINATION.**—We alluded in our issue of the 30th ult., to some of the difficulties encountered in the chlorination process—particularly to the detrimental action of magnesium and lime, when not chloridized in the furnace. There are many other difficulties met with in this process, which can be properly disposed of only by such as are thoroughly and practically versed in the business. The perfect success of the process depends almost entirely on a correct knowledge of the minerals with which the operator is dealing, and the chemical action to which they are subjected in the reverberatory. A thorough desulphurization is especially important. The loss from the presence of sulphur is not confined merely to the ore with which the sulphur is in direct communication, as many suppose; but the detrimental influence of the sulphur extends to a distance of several diameters of the sulphuret itself, preventing, to a great extent, the chlorine from acting upon even the free gold within that space. Arsenic, phosphorus, antimony, etc., are equally detrimental when not understood; but all of which may be readily treated by an intelligent expert.

We would take occasion to mention in this connection that an eminent engineer recently arrived on this coast, and who has had extensive experience in the chlorination process in other places, would like to make arrangements with any parties having within their reach a sufficient supply of sulphurets to warrant the erection of such works. We understand he has some valuable improvements in the practical manipulation of sulphurets, and in the economy of fuel and labor in that direction. Further information can be had at this office.

**PACIFIC BASE-BALL GUIDE FOR 1867.**—A. Roman & Co., publishers, have sent us a copy of this work. It gives the "rules and regulations" of the game, as amended last year, and duly authorized by the Base-Ball Convention.

## Foundry and Machine Work.

At Messrs. H. J. Booth & Co's UNION IRON WORKS we find that a large amount of important machinery is being turned out at the present time.

## LOCOMOTIVES.

Another magnificent locomotive received its finishing touch on Tuesday, ready for trial. Its weight is about 18 tons, with tenders 32 tons; cylinders 14x18 inches. We cannot look upon these California-made majestic motors without a feeling of pride for our master-mechanics and artisans. Messrs. Booth & Co. have constructed this engine upon a plan peculiarly well adapted to secure great power and speed combined. The whole weight of the locomotive rests upon four drivers. These driving-wheels are of good size, being 4 ft. in diameter, with the axles 6 ft. apart. This gives it an easy turn upon a short curve. The cost of construction is somewhat lessened by this mode, and a light engine is enabled to do the work of one of a heavier grade.

These works are also building a new class of locomotives for freighting on heavy grades. The water-tank is carried over the boiler, approximating in appearance the pack on a mule's back. Cylinders 14x18 inches; 6 drivers 3 ft. in diameter. They are built especially suitable for consuming Mount Diablo coal. The working capacity of these engines is represented by the operation of the Sampson, which has taken 26½ tons, net weight, 6½ miles in 25 minutes, over a grade of 300 ft. to the mile.

The material of these locomotives, we are assured, is entirely of the very best—a significant fact, showing that Messrs. Booth & Co. are determined to establish and maintain an enviable reputation for California locomotive building. The best Swedish iron is used; the boiler plates are manufactured to special order, of charcoal-hammered iron; stay bolts and braces of Ulster iron, etc.

## A number of

## COAL CARS,

Of an original pattern, are to be seen at these works. They are made of plate iron. The dump in the bottom may be opened instantly. It is operated by a device similar to that of a car-brake placed horizontally.

## CAR WHEELS.

The casting of car wheels has been reduced to a degree of perfection which has cost a great amount of study and experimenting at these works. It is gratifying to say that they are now made with a nice precision, which insures both economy and durability.

## MINING MACHINERY.

Last week there was shipped from this Foundry, for the Midas Co. near Virginia City, Montana, a 15-stamp mill, including a 45-horse power engine, 1 large size Blake's crusher, 2 Wheeler & Randall pans, 3 Attwood agitators, 3 Hendy concentrators, 1 No. 3 Excelsior pump, smelting furnace, retorts, etc. Also, another 6-stamp mill for the same company, comprising a 16-horse power engine, 2 Attwood agitators, 1 Hendy concentrator, 1 Wheeler & Randall pan, and 1 settler. All except the engines were manufactured here to order.

Prof. H. A. Ward (a gentleman who owns a private museum in Rochester, N. Y., valued at over \$40,000), is superintendent of the Midas, and seems to have a correct appreciation of California-made machinery. After thoroughly acquainting himself with both Eastern and California-made mining machinery, he insisted upon patronizing our own, notwithstanding the extra expense on the first outlay. The freight on this machinery, about 30 tons in weight, cost 30 cents per pound, against 12½ cents, the cost of freight from St. Louis. The machinery for this company comprises some of the latest and most approved patterns, and will doubtless give good satisfaction, opening up, we hope, a new source of trade for our iron workers; for certain it is, that experience will soon teach our mining neighbors that Prof. Ward has acted with wisdom.



With the 15-stamp mill was constructed a model for the laboratory, including a crusher, pan, settler, etc.

Messrs. Booth & Co. are manufacturing for the CARSON HILL Co., of Calaveras county, a 20-stamp mill, 1 Blake's crusher, 5 Wheeler & Randall Excelsior pans, 5 7-ft. settlers, and several Hendy concentrators, to be accompanied with a 45-horse power engine.

For the ALTURAS M. Co., Yuba district, Idaho, 1 45-horse power engine, 20 stamps, 5 Wheeler & Randall Excelsior pans, 3 7-ft. settlers.

For the BRUNSWICK MILL, near Empire City, Washoe, 2 Wheeler pans, 1 8-ft. settler.

For the ORIENTAL M. Co., Wisconsin Hill, Placer county, 1 large size 4½-ft. Wheeler & Randall Excelsior pan, 1 8-ft. settler.

For the BIG BLUE LEAD Co., Kern county, 4 batteries of 4 stamps each.

For the SENASTOPOL MILL, Grass Valley, 4 of Hendy's concentrators.

STOCKHAM's new rock drilling machine, just completed in full working size, is on exhibition. This drill is forced against the rock by a powerful spiral spring, drawn back by a double cam revolving against a tappet. It is simple, and appears to work with a decided success. Captain Cushing, who has this invention in charge, will soon give us an opportunity to illustrate it.

#### MISCELLANEOUS WORK.

Besides other work on hand at the Union, we may mention 50 new retorts for the S. F. Gas Co., to be placed in the new works on Townsend street; Excelsior pumps (which give excellent satisfaction), for Cushing & Co.; a lot of machinery for the new barrel factory on the Potrero; a piece of ordnance for the California Powder Co., made of iron gun-metal, 24-pounder, bore 5½ inches; and extensive repairs on the heavy machinery of the steamship Orizaba.

We expect to continue our report on work at the foundries from week to week.

**NEW INCORPORATIONS.**—April 8th—Industrial and Immigration Association of California: To promote the settlement of vacant lands, and to attract immigration. Capital stock, \$5,000,000; in five million shares of one dollar each. Trustees: R. Townsend Huddart, J. C. Pelton, Thomas Mooney, James Hunter, James D. Connell, Edward Bosqui, Geo. Fisher, John R. Fishbeck, H. L. Davis, H. A. Cobb, Carl Precht, M. D., P. Edw. Connor, L. P. McCarty, Dr. Pigné-Dupuytren.

#### [Special Notice.]

**STAIR BUILDING**, by means of a due regard to a proper division of labor, has gradually grown greatly to the interest of all concerned—into a distinct and separate branch of architecture, being now ranked among the most beautiful and the most useful of the arts—the rules and principles governing it being as well established and as completely reduced to a science as those of Natural Philosophy. The undersigned established himself in this city, in this branch of business, in the year 1858, since which time he has built not only a very large amount of stairwork, but much of it of a very high order and difficult of execution, which he honestly believes, without any disparagement to others, will bear comparison as to strength, symmetry and fineness of finish, with any similar work executed on the coast. In order that others may form some idea of the amount and value of the work, and satisfy themselves as to its style, they are referred to the stairs of Grace Church, Synagogue Emanuel, Masonic Hall, Lincoln School, Cosmopolitan Hotel, and also to those of the steamer Capitol, and other steamers, all of which have been put up in the time mentioned, upwards of \$50,000 worth of stairwork having been turned out from his establishment in the last three years preceding January 1st, 1867.

In addition to the above, all interested are referred to the stairwork of the Mechanics' Institute, which has just been completed at a cost of \$1,450.

The undersigned is now engaged in building the stairs of the new Mercantile Library building, which will be the finest in the city, if not in the Union, at a cost of \$9,000.

Rails, posts and balusters for the interior, are warranted to fit with neatness and accuracy when orders are accompanied with the size of the stairs or the proper measurements. All orders, whether sent by mail, or left at the subscriber's place of business, No. 49 Beale street, will be promptly and faithfully executed.

N. P. LANGLAND.

San Francisco, April 12, 1867.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

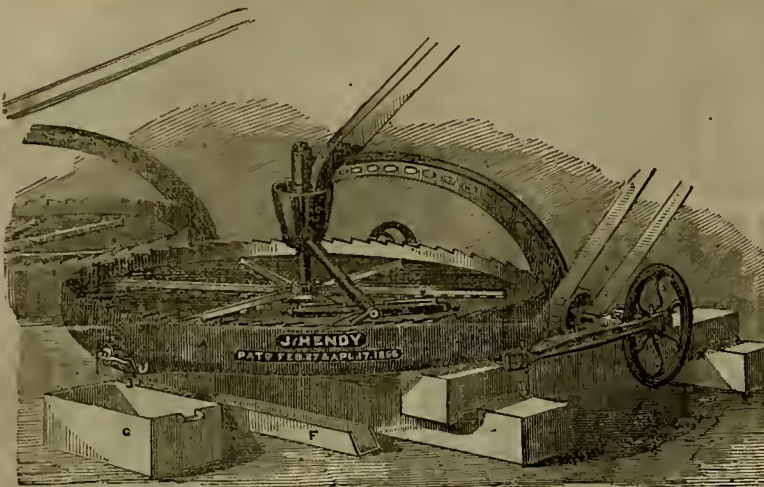


FIG. 1.

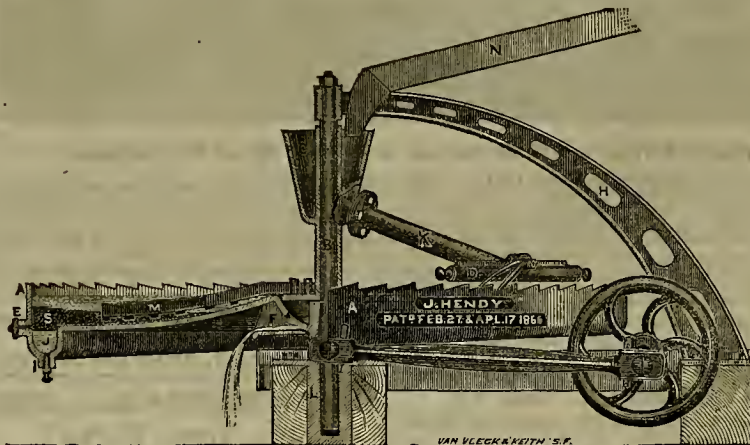


FIG. 2.

### FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

#### Directions for Operating Hendy's Concentrators:

- The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
**FIRST**—Set the Pan, A, level, by its inner rim.  
**SECOND**—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
**THIRD**—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
**FOURTH**—The crank shaft to make 200 to 220 revolutions per minute.

#### References:

- Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:
- |   |                                |
|---|--------------------------------|
| EMPIRE MILL.....                          | Grass Valley, Nevada County.   |
| GOLD HILL MILL.....                       | Grass Valley, Nevada County.   |
| CONEY & BIGELOW MILL.....                 | Jackson, Amador County.        |
| SPRING HILL MILL.....                     | Amador, Amador County.         |
| GOLDEN GATE MILL.....                     | Volcano, Amador County.        |
| OPHIR MILL.....                           | Placer County.                 |
| C. H. SCHNABE'S MILL.....                 | Doty Flat, Placer County.      |
| GOLDEN RULE MILL.....                     | Stewart Flat, Placer County.   |
| BENTON MILL.....                          | Bear Valley, Mariposa County.  |
| LOUISIANA MILL.....                       | Coulterville, Mariposa County. |
| RAWHIDE RANCH MILL.....                   | Jamestown, Tuolumne County.    |
| PEOPLE'S MILL.....                        | Alleghany, Sierra County.      |
| TYRON & CO'S MILL.....                    | Prescott, Arizona.             |
| WOOLSEY & CO'S MILL.....                  | Prescott, Arizona.             |
| NOYES & CO'S MILL.....                    | Prescott, Arizona.             |
| GUADALUPE & SACRAMENTO G. & S. M. CO..... | Sinaloa, Mexico.               |
| TRIUNFO G. & S. M. CO.....                | Lower California.              |

And in use in many other parts of this coast.

For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

#### Remarks:

Many Concentrators have been gotten up in this city. Some of these claim foreign origin; others are of home production. The sonorous Greek names, with which some of these have been dignified, ought, it would seem, to have entitled them to a better fate than that which has befallen them. A large proportion of these machines are now "numbered among the things that were." A few were still-born; never having had an existence except in the shape of advertisements and cuts, prematurely prepared by their too confident projectors. For one of these it was claimed, with a grand flourish of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order or in the way." Unfortunately, however, although it had a reasonable supply of legs, it obstinately refused to run. Amputation failed to remedy the defect, and it now lies forgotten among a heap of old iron,—a mechanical abortion.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works, for 1866, pages 51, 53.

#### CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.

March, 1867.

**Holders' Insurance Company—**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 10v14t9pqr

## STEAM Family Chartres Coffee AND SPICE MILLS.

Established July 1, 1856.

#### FIRST PREMIUM

Awarded by the Mechanics' Fair, 1865, for the best Coffee and Spices.

CHARLES BERNARD,

MANUFACTURER OF AND DEALER IN

Family Chartres Coffee

—AND—

SPICES OF ALL KINDS,

No. 707 Sansome street, between Jackson and Pacific,  
SAN FRANCISCO.

Goods of the best quality. Has no fear of Counterfeits—each package bears the signature of

C. BERNARD.

Has never employed any Chinese Labor.  
15v14cop3m

MARTIN L. HAAS,



Pearl Shirt Manufactory.

Southeast corner Sansome and Halleck sts.,

15v14-9p1m SAN FRANCISCO.

**PACIFIC  
Rolling Mill and Forge Co.,**  
SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

—ALSO—

HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention.

The highest price paid for Scrap Iron. 9v143m9p

A. S. Hallidie & Co.,

MANUFACTURERS OF

FLAT & ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach

**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hempen rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hempen of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire Rope—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks supplied.

Iron and Copper Wire Cord—½ to ¾-inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hempen Rope, and Chain.

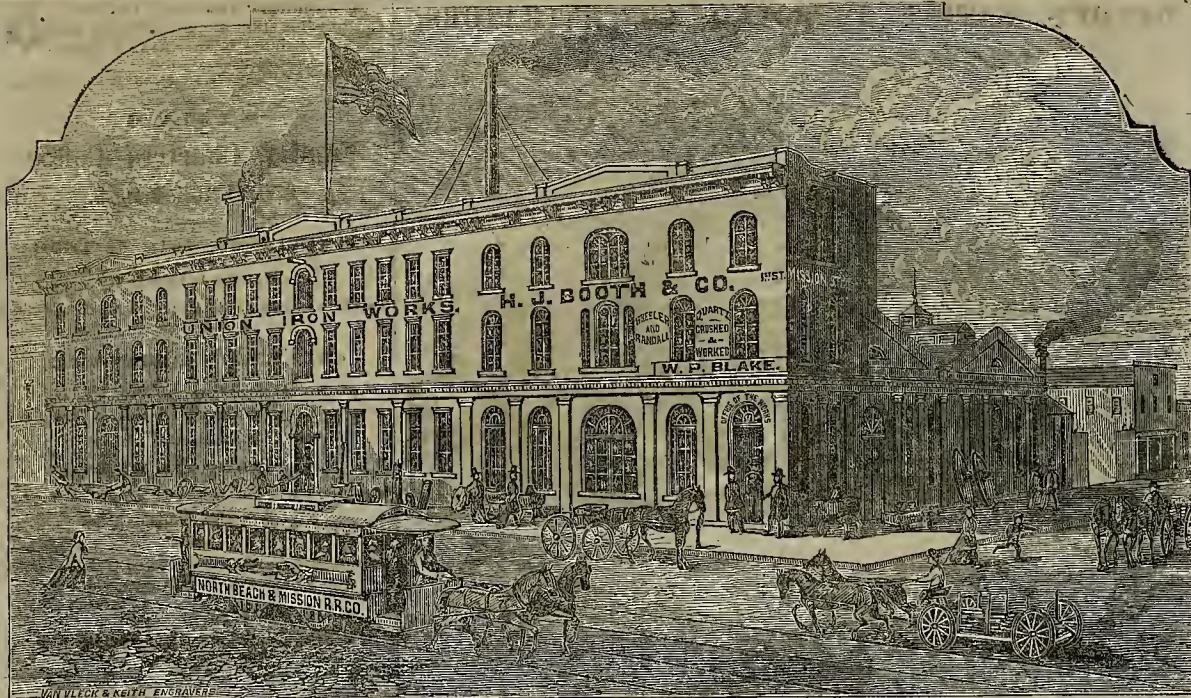
Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. 100 ft.	Cir. 100 ft.	Cir. 100 ft.	Link. 100 ft.	Brk'g Wt. Load.
2 in. 60	1½ in. 33	5 in. 100	¾ in. 266	7 tons.
2 ½ in. 83	2 in. 55	6 in. 130	1 in. 341	11 tons.
3 in. 170	2½ in. 91	8 in. 236	1½ in. 633	19 tons.

Pamphlets containing data, with prices annexed, forwarded free by mail or express, on application to manufacturers. 25v13-6m9p

#### Boy Wanted.

About fifteen or sixteen years of age, for errand and mailing clerk. Must write a good hand, and come well recommended. Address or apply at this office.





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coining Machinery, Pipe Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Out-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenos Wheeler's Improved flat bottom pan, Beldin's pan, Vetch's tuba, Prater's concentrators, Waklee's pans, Beers' pan, Oerman Barrels, Anstra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machinings with the latest improvements, every variety of Stamps, Mortars, Gams, Fans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

Geo. W. Prescott.

IRVING M. SCOTT

H. J. BOOTH & CO.

## Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

### MACHINERY.

**STEAM ENGINES AND QUARTZ MILLS.**  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing.**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel.**  
Giving the greatest power, at lower cost than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

**WILLAMETTE IRON WORKS,**  
PORTLAND, OREGON.

**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-First and E streets,  
18v13ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
Sacramento.

**WILLIAMS, ROOT & NEILSON,**  
MANUFACTURERS OF

**CROSS' PATENT BOILER FEEDER,**  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.  
**Dunbar's Patent Self-Adjusting Steam Piston**  
**PACKING**, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**

No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction.

**GEORGE T. PRACY,**  
**MACHINE WORKS,**

Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,

—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24v12

### SAN FRANCISCO

**Foundry and Machine Works,**

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—  
**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston-Packing**, requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11ly **DEVORE, DINSMORE & CO**

### GLOBE

**Foundry and Machine Shop,**

STOCKTON, CAL.

**KEEP, BLAKE & CO.,**

MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam**  
**Engines, Horse Powers,**

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited and promptly executed.

13v13ly

LEWIS COFFEY.

**LEWIS COFFEY & RISDON,**  
**Steam Boiler & Sheet Iron Works.**

The only exclusively Boiler Making establishment in the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF BRASS, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Pails, Rudder Braces, Hinges, Ship and Steamboat Belts and Gongs of superior tone. All kinds of Cranks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 24v12  
V. KINGWELL. 13v13ly J. H. WEED.

J. O. HANSCOM } **HANSCOM & CO.,** { T. PENDERGAST.  
H. S. SMITH. } W. W. HANSCOM.

### Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

**Practical Machinists and Iron Founders,**  
MANUFACTURE

### STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else.

**Wheeler & Randall's New Grinder and**  
**Amalgamator,**

Which only needs examination to be appreciated.  
Tyler's Improved Water Wheel,

Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.

All wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast**  
**White Iron Stamp Shoes and Dies.**

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.

15v12

**FULTON**  
**Foundry and Iron Works.**

**HINCKLEY & CO.,**  
MANUFACTURERS OF

**STEAM ENGINES,**

Quartz, Flour and Saw Mills,

**Moore's Grinder and Amalgamator, Brodie's**  
**Improved Crusher, Mining Pumps,**

**Amalgamators, and all kinds**  
**of Machinery.**

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco.

3-17

**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

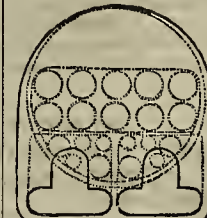
**MARINE**  
**Locomotive,**  
And all kinds of  
HIGH PRESSURE

**Steam Boilers**  
MADE.

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.

**Old Boilers Repaired**  
**D. CAMERON.**



**WASHING RICH ORES BY HAND.**—The Reese River *Reveille* of March 23d, has the following: From information derived from several sources we are led to believe that mining for chloride ores will be quite general in this district during the coming season. There are a number of claims on Lander Hill that yield ore of a high grade. These have been worked more or less lately, and their chloride ore has yielded silver at the rate of from \$250 to \$400 per ton. We gave an account a few days ago of six large bars of bullion which were produced at the Keystone mill from several small lots of chloride ore which were obtained from claims on Lander and neighboring hills. We have been told of a case where three men had mined for a year steadily in Lander Hill, and had extracted chloride ore to the value of \$9,000. One who is at all familiar with the history of the mines of that hill, and with the extraordinary ore that is frequently met with, will not find the story difficult to believe. In a claim showing occasional bunches of rich chloride ore, it is not a hard matter for a couple of experienced miners, who can assort the ore skillfully and closely, to bag a thousand dollars or so as a reward for a few months' work. Of course we do not pretend to say that this is the general experience. We admit it is the exception to the rule. All that we claim is, that of the 6,000 or 7,000 locations in the district—a considerable proportion of which were located without reference to their merits, and conveyed to "middle-men" in the Eastern market—there are several hundred good veins, many of which will produce rich chloride ore. Such a mine may be worked by a couple of men as easily and far more profitably than an ordinary placer mine. We are personally acquainted with an intelligent miner, who has one partner working a mine on Lander Hill, and who is critically assorting the ore taken out in the expectation of collecting a ton that will yield \$5,000 or \$6,000. Would not such a result be well worth a year's labor? It is certainly worth the trial.

**TOWNE & BACON,**  
Book and Job Printers,

Have the Largest Office,  
Do the most work,

And do it better  
Than other offices

In this City,  
**536** Try them

With a Job,  
And you will be

Satisfied the above  
Statements are facts.

Their office is at 536  
Clay St., below Montgomery,

Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**

F. CLEGG, B. KLEINCLAUS, W. DEBRIE.

**CLERC & CO.,**

**Iron Founders, Steam Engine Builders, and**  
**Makers of all kinds of Machinery.**

No. 28 FREMONT STREET, San Francisco.  
9v14dm

J. NEWSHAM, J. BIGWOOD.

**SOUTH BEACH IRON WORKS,**

Near corner of King and Third streets, San Francisco.

**MARINE ENGINES,**  
AND ALL KINDS OF

**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed.

13v14-17

**JOHN LOCHHEAD'S**

**Steam Engine Works,**

Beale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular.

25v12-2m

**Mechanical Drawings.**

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.



**FOSSIL REMAINS OF THE HORSE** have been found in the post-pliocene or "altered drift" of North and South Carolina, and more recently in Kansas. The latter were discovered forty-five feet below the surface, in sinking a well. The remains give evidence of the existence of the horse at that early period, in no wise differing from the living species of this animal.

**ELECTRO-BATHOMETER.**—This is an apparatus invented by Paul Hedonin, of Rouen, to determine the depth of water to any extent with exactness. The impact of the sounding lead upon the bottom determines a magnetic current which indicates at the surface the precise moment of contact.

**TITLES TO MINES.**—Placer county miners are beginning to file pre-emptive claims for lands in mineral districts.

**B. F. HOWLAND, PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Prints, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Parties desiring only \$24 per dozen. Vignettes at \$1 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or Superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Reference—H. W. Nugent, 323 Clay street, San Francisco. Humboldt City, Nevada. 5v14-1f

**JOHN TAYLOR & CO., IMPORTERS,**  
AND DEALERS IN

**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street, SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior  
**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865. 11v10-1f

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
**E. D. WATERS & CO., Prop'rs.**  
E. D. WATERS, Sen. T. E. CROUSE. J. H. CARMANY,  
Office, Northeast corner Clay and Battery sts., SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.  
Terms, \$9 per Year, payable in advance.

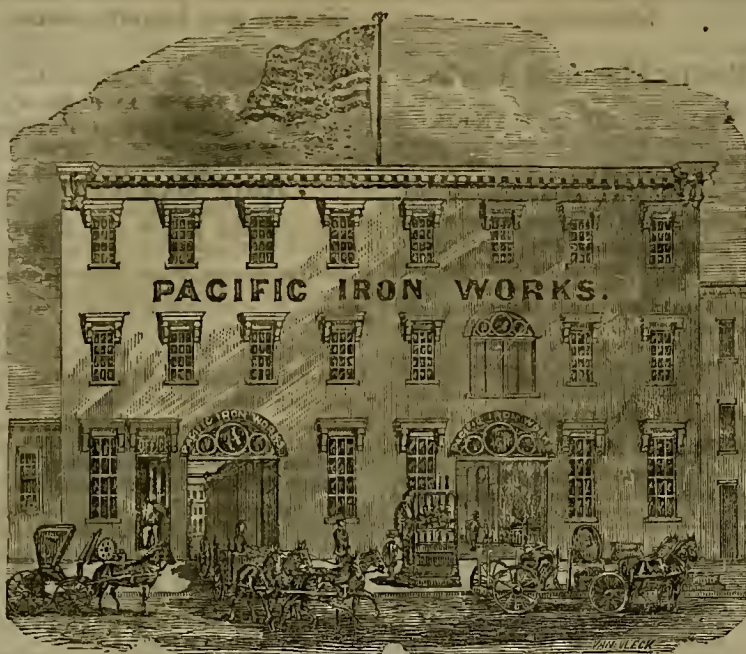
**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every STEAMER DAY.  
13v13-1f

**International Hotel,**  
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BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE is in PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2 per day for Board and Room.  
FINE BATH HOUSE and BARBER SHOP ATTACHED TO THE HOUSE.

Boats belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
2v12 P. E. WEGANT, Proprietor.



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c. &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.  
**GODDARD & COMPANY.**

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In Gold and Silver Cases,  
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**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
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2v10-6m

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IMPROVED NOISELESS  
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We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent agency in New York city, and having a faithful and reliable associate in Washington City, we are now better than ever before prepared to secure the claims of our applicants, in a careful, prompt and efficient manner.  
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"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
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**MACCARONI, VERMICELLI,**  
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**BRIGNARDELLO, MACCHIAVELLO & CO.**  
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THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Saving and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
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We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable of any Engine in use.

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Repairing promptly and neatly attended to.  
13v11

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**LOCKE & MONTAGUE,**

HAVE A FULL STOCK OF  
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**Lamp Utensils,**  
**Powder Cans,**  
**Quicksilver Dippers,**  
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**WARRANTED THE BEST!**  
All of which they offer at the lowest market rates.  
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9v14qrlf12p

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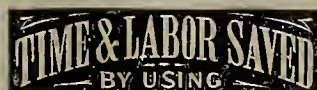
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HONGKONG, 1867. 13v14tf



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THIS POWDER IS SUPERIOR TO ALL OTHER PRE-  
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fabric. Equally as good for using in hard as soft water.  
One pound will make three gallons of beautiful soft soap.  
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terms. Having in their Mill all the necessary ap-  
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the analysis of Ores and Minerals, a good opportunity is  
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business.

S. P. KIMBALL,

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10v10

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and Metallurgy.

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nature of the ore may require.

Practical Instructions given in Assaying, all branches of  
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Furnishes Plans and Estimates for the erection of Quartz  
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steady and successful experience in working ores in Washoe,  
and is practiced in saving sulphurets and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
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ARTIFICIAL LEG,  
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BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH  
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RICHARDS' REMEDY!  
For Inflammatory, Chronic, Hereditary and Mercurial  
Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all  
the modifications of the disease, whether confined to one  
portion of system or erratic in its character. Composed  
wholly of VEGETABLE EXTRACTS, it exterminates the  
cause of the disease, and restores the system to its normal  
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REFERENCES.—George Hearst, John W. Gashwiler, Richm.  
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Between Montgomery and Kearny Streets  
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CURES ALL CURABLE DISEASES, BY THE CONGEN-  
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21v13m

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HOLLOW WARE GLASS,

All sizes of German Flint Prescription Vials, Fluted Pre-  
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torts, Flasks, Funnels, Syphons, Tubing, etc., etc. Lamp  
Chimneys of every size and description, equal in quality to  
the best imported.

Private Molds made and lettered to order at short  
notice.

13v14-1m

NEWMAN & BRANNAN,  
Proprietors.



## List of Officers of Corporations and Mining Companies.

(PUBLISHED IN THE FIRST ISSUE OF EACH MONTH)

(Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona-fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.)

**CALIFORNIA BORAX Co.**—March 13th. Trustees: L. Maynard, C. J. Brenham, E. B. Northrup, S. F. Butterworth, A. C. Peachy. President, L. Maynard; Secretary, J. W. Mather; Superintendent, C. W. Lightner.

**EUREKA COAL M. Co.**—March 4th: Trustees: Geo. Platt, Jos. S. Kohn, W. Burling, L. H. Newton. President, W. Burling; Treasurer, L. H. Newton.

**NUESTRA SENORA DE GUADALUPE Co.** March 4th. Trustees: F. Staud, John Greif, A. Himmelmann, M. Kirsch, E. J. Pfeiffer. President, F. Staud; Secretary, E. J. Pfeiffer; Treasurer, A. Himmelmann; Superintendent, J. J. Correll.

**SAN MARCIAL S. M. Co.**—State of Sonora, Mexico.—March 19th. Trustees: Henry Brickwedel, Isaac Branham, P. J. White. President, Henry Brickwedel; Secretary, R. N. Van Brunt; Superintendent, F. A. Prescott.

**WATT CONS. G. & S. M. Co.**—March 13th: Trustees: Wm. N. Shelly, Andrew Young, H. W. Jones, H. Bailey, John F. Schander. Secretary, Geo. R. Furburt.

## National Mineral Land Law, Instructions. Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address Dewey & Co., office Mining and Scientific Press, San Francisco.

## Perry Davis' Vegetable Pain Killer.

As an internal remedy, has no equal. In cases of Cholera, Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night, by taking it internally, and bathing with it freely. It is the best liniment in America. Its action is like magic, when externally applied to bad sores, burns, scalds and sprains. For the sick headache and toothache, don't fail to try it. In short, it is a Pain Killer.

**PERRY DAVIS' PAIN KILLER.**—This medicine has become an article of commerce, a thing no medicine ever became before. Pain Killer is as much an item in every home of goods sent to country merchants as tea, coffee, or sugar. This speaks volumes in its favor.—*Glen Falls Messenger.*

Sold by all Medicine Dealers everywhere. 14v14-1m

## Allen's Lung Balm.

The following letter, from Dr. A. L. Scoville, who has had many years experience in the medical business, and with Lung Remedies, will give the added still more assurance that the sure remedy is found at last; and the consumptive should lose no time in commencing the use of Allen's Lung Balm:

CINCINNATI, JUNE 9, 1864.  
Gentle—I make the following statement from a perfect conviction and knowledge of the benefits of Allen's Lung Balm, in curing the most deep-seated Pulmonary Consumption. I have witnessed its effects on the young and the old, and I can truly say that it is by far the best expectorant remedy with which I am acquainted. For Coughs, and all the early stages of Lung Complaints, I believe it to be a certain cure, and if every family would keep it by them, ready to administer upon the first appearance of disease about the lungs, there would be very few cases of fatal consumption! It causes the phlegm and matter to raise without irritating those delicate organs (the lungs) and without producing constipation of the bowels. It also gives strength to the system, stops the night-sweats, and changes all the morbid secretions to a healthy state.

Yours, respectfully,  
A. L. SCOVILLE.  
Consumptives, do not despair, because all the remedies that you have tried have failed, but try this Great Remedy. Be sure you call for Allen's Lung Balm. Price One Dollar per bottle.

Sold by all Medicine Dealers everywhere. 14v14-1m

## New Mining Advertisements.

## Adella Gold Mining Company, Rock Creek, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of April, 1867, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. C. TAYLOR, No. 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the ninth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 429 Pacific street, San Francisco. apr13

## Batopilas Mining Company, Batopilas District, State of Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of April, 1867, an assessment (No. 3) of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, No. 811 Montgomery street, up stairs, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. MARTINON, Secretary.  
Office, 811 Montgomery street, up stairs, San Francisco, Cal. apr13

## Santa Cruz Petroleum Oil Works Company.

Location: Santa Cruz County, California.

Notice—There are delinquent, upon the following described stock, on account of assessment (No. 19) levied on the ninth day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Coulter, Jas.	218	5	\$2 50
Christiansen, C.	682	50	25 00
Christiansen, C.	681	50	25 00
Hahn, John.	686	50	25 00
Jones, Martha.	680	50	25 00
Mathiesen, Pauline.	686	4	2 00
Ried, U. R.	730	25	12 50
Smith, G. L.	729	10	5 00
Smith, Geo.	760	20	10 00
Tillinghast, W. H.	762	100	50 00
Winship, E.	764	300	150 00
Zimmerman, J. A.	769	20	10 00

And in accordance with law, and an order of the Board of Trustees, made on the ninth day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Cobb & Sinton, 407 California street, San Francisco, Cal., on Tuesday, the twentieth day of April, 1867, at the hour of 1 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. WEGENER, Secretary.  
Office, 415 Montgomery street, San Francisco, Cal. apr13

## Yosemite Consolidated Mining Company, Location of Works: Santa Fe District, Lander County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of April, 1867, an assessment (No. 2) of fifty (50) cents per share was levied upon the capital stock of said Company, payable in gold coin of the United States, on the thirteenth day of April, 1867, to David Winzler, Secretary, at the office of the Company, No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the fifteenth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, corner of Leidesdorff street, San Francisco, Cal. apr13-3w

## Mining Notices—Continued.

## Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.

Notice—There are delinquent, upon the following described stock, on account of assessment levied on the nineteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
Bailey, J. H.	137	5	\$25 00
Calvert, William	134	5	25 00
Calvert, William	133	15	75 00
Crane, G. L.	138	40	200 00
Crane, G. L.	138	10	50 00
Donnell, Wm M.	127	3	15 00
Donnell, Wm M.	141	5	25 00
Harashty, A. B.	151	2	10 00
Dowling, Mrs E. N.	107	1	5 00
Dowling, Mrs E. N.	115	1	5 00
Eggers, G. H.	125	1	5 00
Fiedler, F.	90	20	100 00
Gattell, B.	135	5	25 00
Gattell, B.	134	75	375 00
Harashty, Mrs E. N.	119	10	50 00
Hyatt, Caleb.	129	2	10 00
Hyatt, Caleb.	131	3	15 00
Hyatt, Caleb.	133	7	35 00
Hyatt, Caleb.	137	13	65 00
Leisewitz, H.	64	10	50 00
Leisewitz, H.	65	75	375 00
Leisewitz, H.	67	20	100 00
Leisewitz, H.	68	30	150 00
Leisewitz, H.	153	7	35 00
McNulty, E. E.	152	10	50 00
Molitor, A. P.	58	31	155 00
Molitor, A. P.	60	30	150 00
Molitor, A. P.	91	20	100 00
Molitor, George, in trust	118	1	5 00
Noyes, L. W.	138	2	10 00
Newman, S.	139	3	15 00
Newman, S.	137	10	50 00
Nelson, Peter	173	3	15 00
Park, H. J.	162	60	300 00
Parsons, Chas A.	162	5	25 00
Peterson, N. E.	181	5	25 00
Patten, Porcelia G.	205	4	20 00
Ronay, Hyacinth	169	10	50 00
Smith, R. H.	169	10	50 00
Tiecher, L. J.	169	10	50 00
Uman, M.	164	25	125 00
Valiant, J.	204	10	50 00
Valiant, J.	204	20	100 00
Voigt, C. H.	126	15	75 00
Woodhams, Oscar.	17	20	100 00
Woodhams, Oscar.	18	20	100 00
Woodhams, Oscar.	20	70	350 00
Woodhams, Oscar.	21	10	50 00
Woodhams, Oscar.	22	10	50 00
Woodhams, Oscar.	24	10	50 00
Woodhams, Oscar.	25	5	25 00
Woodhams, Oscar.	25	5	25 00
Woodhams, Oscar.	133	3	15 00
Woodhams, Oscar.	165	20	100 00
Woodhams, Oscar.	165	20	100 00
Woodhams, Alfred R.	165	5	25 00
Woodhams, Lucy A.	169	25	125 00
Woodhams, Mary E.	170	10	50 00
Wolf, A. B.	174	10	50 00
Wilke, F. C.	210	10	50 00
Winn, Richard.	173	5	25 00
Woodard, W. A.	169	35	175 00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. apr2

## Chippeween Mining Company—District of Ures, Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of March, 1867, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 318 California street, up stairs, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. m19

## Postage.—The postage on the MINING AND SCIENTIFIC PRESS is five cents per quarter, payable in advance at the Post Office delivering the paper. Postage free in the city and county. Foreign postage (with few exceptions) two cents per copy, prepaid. Single copies to any address in the United States, two cents.

## Cosala Silver Mining Company, Cosala District, State of Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of March, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to Charles Bux, Secretary, at the office of this Company, 510 Battery street, opposite the Custom House, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventh day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. BAUM, Secretary.  
Office, No. 510 Battery street, opposite the Custom House, San Francisco, California. m16

## Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Comp. J.	71	3	\$10 00
Drinkhouse, J. A.	6	3	30 00
Dinktepel, L.	51	3	30 00
Drake, W. C.	23	10	50 00
Harker, W. H.	14	10	50 00
Harker, J. W.	134	3	30 00
Jacobs, N. B.	85	4	20 00
Fassett, N. C.	132	1	5 00
Gray, Asaph.	133	3	30 00
Loeder, B. C.	69	6	120 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

## Dardanelles Copper Mining Company, Low Divide District, Dol Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held at Crescent City, on the sixteenth day of March, 1867, on order was made annulling the assessments levied February 29th, 1864, April 7th, 1865, August 22d, 1865, and June 2d, 1866, and levying an assessment of forty-five (45) cents per share upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary at Crescent City, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the first day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. CURTIS, Secretary.  
Office, at Woodbury & Morhoffer, Crescent City, California. apr6

## Diana Gold and Silver Mining Company, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the third day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. m13

## George Washington Gold and Silver Mining Company, Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 13.  
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of April, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the eleventh day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 333 Montgomery street, San Francisco. apr9

## Gold Quarry Company, Location of Works: Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of March, 1867, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, (room No. 4) No. 706 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLEBURN, Secretary.  
Office Room No. 4, 706 Montgomery street, San Francisco, Cal. m13

## Keystone Mining Company, Location of Works: Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, No. 440 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Monday, the twenty-ninth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. m9

## Blanks, Blank Mining Books, Constitution and By-Laws

—FOR—  
Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the Mining and Scientific Press.

Orders from the Interior faithfully attended to.

## Lycos Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of April, 1867, an assessment of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, will be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the eighteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner of Washington and Sansome streets. apr6

## Nuestra Senora de Gandelape Silver Mining Company, Location of Works: Tayoltita, San Dimas District, Durango, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, E. J. PFEIFFER, at the office, No. 210 Post street, or to the Treasurer, A. H. MELLMAN, at his office, No. 637 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of April, 1867, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the fifteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco. m23

## North Star Gold and Silver Mining Company, Reese River Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately to the Secretary, GEORGE H. FAULKNER, No. 423 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the fifteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEORGE H. FAULKNER, Secretary.  
Office, 423 Front street, San Francisco, Cal. mb16

## Rattlesnake Gold and Silver Mining Company, Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 318 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, up-stairs, San Francisco. m23

## San Marcial Silver Mining Company, Location of Works: San Marcial, District of Hermosillo, State of Sonora, Mexico.

Notice—There are delinquent, upon the following described stock on account of assessment levied on the thirtieth day of January, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.
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**SILVER BEND.**—The Reporter, which salutes us from the new town of Belmont, March 30th, says: We are in the midst of a mining region, the wealth of which the world cannot yet comprehend. In extent it is greater than many of the States of the East, or than many of the kingdoms of Europe. The Transylvanian ledges have now been sufficiently opened to exhibit a mineral belt of about a mile in length, of an average width of 12 ft., and of an average yield of not less than \$100 per ton. The quartz is pay rock from the top, and is being worked from the surface. If appearances are not utterly deceptive, the ledges referred to are as much better defined, richer, more permanent and valuable than the Comstock, as the Comstock is better than no ledge at all. This may sound like the language of extravagance, but time will demonstrate it to be the simple truth. Col. Buell's mill has extracted \$100,000 of bullion from 1,000 tons of Highbridge ore, all taken from within 25 ft. of the surface, and there are 80 stamps on the road for the Combination and Child & Canfield Co's, which will make our bullion yield something over \$200,000 per month before the summer is over.

A week or two since a ledge was discovered near the entrance to Charnock's Pass, upon the foothills immediately adjoining the Smoky Valley, that bids fair to prove of no little importance. Mr. Charnock is the discoverer. There are several owners. Workmen are sinking upon the vein. Its thickness at the depth at present attained is six ft., and it is represented to carry mineral throughout its entire width.

In Turkey, the income of the sovereign absorbs ten and eight-tenths per cent. of the entire revenue. In England six-tenths per cent. are applied for supporting royalty.

**QUICKSILVER.**—A promising discovery of cinnabar has been recently made in Pope Valley, Napa county.

**MELLVILLE C. KEITH, M. D.**  
Homeopathic Physician,  
No. 25 Montgomery st., opposite the Lick House, (Room 12,  
SAN FRANCISCO,  
Devotes special attention to CANCER, PARALYSIS and  
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NEW ATTRACTIONS are being constantly added to all  
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FOR ABOLISHING PAIN—THE BEST REMEDY IN  
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all aches and pains. It is the poor man's friend, and the  
best family physician. Full directions accompany each  
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CO., Druggists and Chemists, 534 Sacramento street, op-  
posite What Cheer House, San Francisco. 10v11-ly

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**GROCERS,**  
Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.  
Goods delivered at any point within the city limits.  
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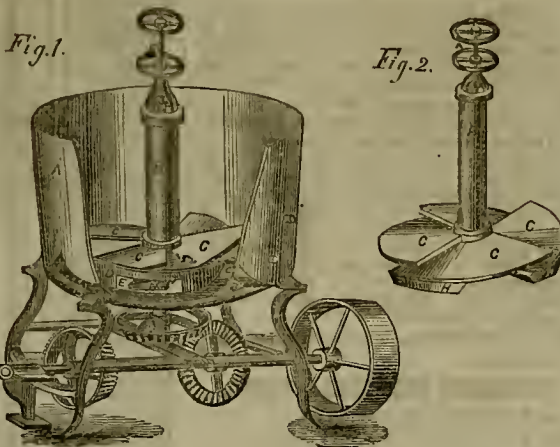
**California Steam Navigation**  
**COMPANY.**  
Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOLOS.....CAPT. A. FOSTER  
" YOSEMITE.....CAPT. W. BROMLEY  
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One of the above steamers leave BROADWAY WHARF  
at 4 o'clock P. M. EVERY DAY (Sundays excepted), for  
Sacramento and Stockton, connecting with light-draft  
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bia, Victoria, V. I., Santa Barbara, San Pedro, and San  
Diego.  
Office of the Company, northeast corner of Front and  
Jackson streets.  
**B. M. HARTSHORNE,**  
President.  
13v12

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THE PHILOSOPHY OF MARRIAGE, BEING FOUR IM-  
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addressing and inclosing twenty-five cents, postage stamps  
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tgomery street, San Francisco. 12v13 1y

## Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

For rapidity and thor-  
oughness of work, the ma-  
chine above illustrated is  
unequaled by any. It  
wastes no appreciable  
quantity of quicksilver,  
and is of itself a perfect  
settler. Fig. 1 represents  
the pan with part of its  
side removed, and fig. 2  
the screw muller, and its  
shoes. The letters C show  
the threads of the screw;  
H, its shoes, and D a low  
cylinder within which the  
screw rotates; E, repre-  
sents open spaces through  
the base of the cylinder,  
and F, inclined partitions  
filling (at those points) the  
spaces between the cylin-  
der and the shell of the  
pan. These inclined par-  
titions are to intercept the  
current of pulp around the  
pan, as it issues from un-  
der the muller, and turn it  
toward the center again, over the screw. The dies are not shown in the  
figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a  
slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, form-  
ing a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into  
contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being  
constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the  
quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again  
seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it,  
which process is continued as long as desired. The pulp can thus be forced into contact with the  
mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape  
contact with the mercury, that contact being under the immense pressure of the perpetual screw, in  
addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the  
pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator  
is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific  
Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San  
Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14 4r



Stair Work of all kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.

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**STAIR BUILDER,**  
No. 49 Beal street,  
Between Market and Mission,  
SAN FRANCISCO.  
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CONSTANTLY  
On Hand and for Sale.

**PACIFIC POWDER MILL**  
COMPANY'S  
**BLASTING POWDER!**  
MANUFACTURED  
IN MARIN COUNTY,  
CALIFORNIA.

FOR SALE BY  
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**HAYWARD, COLEMAN & CO.,**  
IMPORTERS AND REFINERS  
—OF—  
**Illuminating, Lubricating,**  
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**PAINT OILS!**

CONSISTING OF  
KEROSENE, LARD, SPERM, ELEPHANT, POLAR,  
TANNERS', NEATFOOT, BOILED AND RAW  
LINSSEED, CASTOR AND CHINA NUT.  
—ALSO—  
**SPIRITS OF TURPENTINE & ALCOHOL**

NOTE.—We would specially call the attention of Mill  
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which we manufacture from the California Petroleum.  
This Oil will not gum. Machinery thoroughly cleaned and  
lubricated with it will not heat, and after remaining at rest,  
can be started without cleaning oil.  
A sample can of our Paraffine Oil will be forwarded  
on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**  
An elegant and complete assortment on hand.—  
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**Job Printing Press for Sale—\$250.**  
A Largest Size (half medium) RUGGLES' BEST JOB  
PRESS, in fine order and good as new, can be had for  
\$250, cash—lowest price. Warranted. Apply to  
DEWEY & CO.,  
Mining and Scientific Press Office.

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**PATENT RIGHT OF**  
HUNT'S WINDMILL for the  
State of California or the whole  
Pacific coast.  
This Mill is superior to any  
other, can be built cheaper, and  
is more durable.  
Full sets of patterns for four  
sizes Self-Regulating Mills, and  
three sizes of Adjustable Mills,  
will be sold with the right.  
This Windmill has been exten-  
sively advertised all over this  
coast, and is favorably known.  
Apply to  
**E. O. HUNT,**  
28 SECOND STREET,  
11v24 San Francisco.

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WE ARE INFORMED THAT CERTAIN PERSONS ARE  
offering to manufacture and sell Nitro-Glycerin, to be  
used for Explosions in Oil Wells, Blasting or other pur-  
poses.

This is to notify the public that the United States Blasting Oil  
Company is the sole owner of the Nobel Patents for manufacturing  
Nitro Glycerin, and for exploding the same; and that any and all  
infringements of the Company's rights will be prosecuted in law.

The Company is now prepared to supply any desired  
quantity of the best quality of Nitro-Glycerin to the public,  
with instructions how to use it and avoid accidents. Orders  
to be addressed to JAMES DEVEAU, Secretary, 32 Pine  
street, New York.

**T. P. SHAFFNER,**  
President U. S. Blasting Oil Company.  
32 Pine street, New York.

**V. CUSHING, Agent**  
For the Purchase and Shipping of Machinery  
OF ALL KINDS.

**SPECIAL ATTENTION GIVEN TO QUARTZ MILL**  
Machinery and Findings, and Miners' Material of every  
description. Being a PRACTICAL MACHINIST, and giving  
my personal attention to the execution of orders, I can  
guarantee the BEST class of work at the LOWEST PRICE  
in the city. Office, No. 120 Front street, San Francisco.  
3v11r

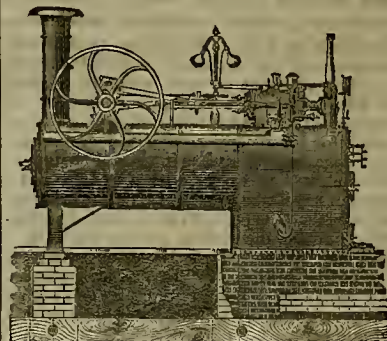
**Important to Californians.**—Many inventors have  
lately had their claims for Patents seriously (and in some  
cases fatally) delayed by the unqualification of agents who  
have not complied with the Government license and revenue  
laws, as well as other new and imperative regulations.  
These discrepancies, although arising from the inexperience  
of honest agents, are none the less dangerous to applicants  
for patents, whose safest course is to trust their business  
with none but active and experienced solicitors. THE MIN-  
ING AND SCIENTIFIC PRESS PATENT AGENCY has strictly com-  
plied with the requisitions of the Department, and properly  
filed all necessary papers as Olaim Agents.

## Portable Steam Engines!

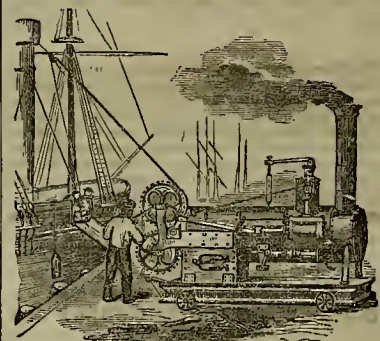
"Hoadley's" and "Hittinger's" Make.



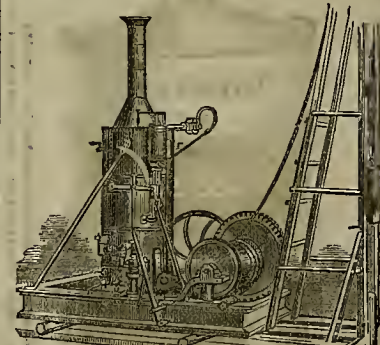
**HOADLEY'S.**  
**FOUR SIZES,**  
8, 10, 12, and 15-Horse Power,



**HOADLEY'S.**  
**3 to 40-Horse Power.**



**HITTINGER'S.**  
**THREE SIZES,**  
5, 7, and 10-Horse Power



**HITTINGER'S.**  
**TWO SIZES,**  
5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DUR-  
ability, and Economy, with the Minimum of weight  
and price.

These Engines are favorably known, a large number  
being in use on this coast for hoisting, pumping, threshing,  
milling and millinery purposes.  
Steam can be got up on these Engines in fifteen minutes  
after reaching the place of operation, and the time, expense  
of setting boilers, machinery, and "construction account"  
saved, (which is often the difference between the successful  
and unsuccessful prosecution of mining enterprises), in  
fact, the portable principle is the pioneer's friend, and en-  
ables him to draw engines on their own wheels to his cabi-  
door, and plant on the outermost confines of civilization  
the saw and grist mill, and it has done and will do more  
to help subdue the continent than any other of the modern  
motors which are crowding society and normalizing the  
world.

All sizes on hand from 3 to 30 horse power, with and  
without carriages.  
Also, Portable Saw and Grist Mills.

For sale by  
**TREADWELL & CO.,**  
9v14-6m1p Corner of Front Market and streets.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**SOPER'S IMPROVED HAY KNIFE.**—Mr. P. O. Soper, of this city, has submitted to our inspection an improved hay knife, recently invented by him, which presents decided advantages in form of construction over those in ordinary use. This knife is so constructed by the peculiar manner in which it is attached to the handle, that it cuts its way through the hay naturally, and under a comparatively light pressure; allowing nearly the entire strength of the operator to be expended in simply giving the knife its cutting action. Negotiations are being made for the manufacture of a limited number of these knives for this market. This may be set down as another of the really useful and conveniently practical California inventions.

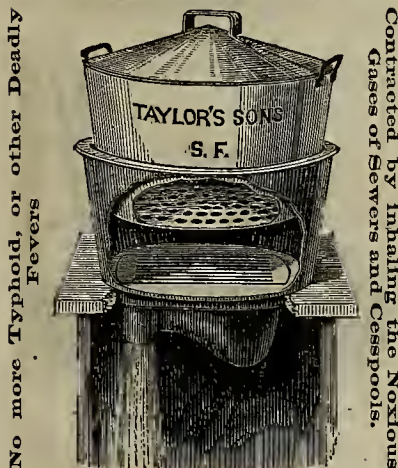
**A NEW PRINTING MACHINE.**—Mark Twain, in a recent letter to the *Alta*, speaks of a new printing machine, owned in part by a Californian, which is creating some attention in New York. According to this correspondent, the invention is such that with a single alphabet of type, arranged around a wheel, the most elaborate book may be impressed letter after letter, in plaster plates, ready for the reception of the melted metal, and do it faster than a printer could compose the matter. It works with a treadle and a bank of keys, like a melodeon. It does away with cases of type, setting up and distributing, and all the endless paraphernalia of a printing office. It will either print or stereotype music with the utmost accuracy. An elaborate "border" may be printed in three minutes, by repeated impressions of a single type.

**Gold Bars**, of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

**Stebbins' Grinder, Amalgamator and Concentrator**, combined and all within the same pan, can now be seen in operation at the Franklin Foundry, Fremont street, between Mission and Howard. Sulphurets perfectly concentrated within thirty minutes on the rim off he pan near the surface of the water—the process of grinding and amalgamating going on at the same time. All the inventor asks is an examination of his new Concentrator, believing it to be the best and quickest ever yet invented. 14v14 tf

A. S. CHURCH. S. S. CLARK.  
**CHURCH & CLARK,**  
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Mediterranean and California  
FRUITS, NUTS, CONFECTIONERY, Etc.,  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 407 Front st., San Francisco.  
Printed list of kinds and prices furnished. 15v14-6m12p

## HEALTH! HEALTH!



To prevent this, purchase one of  
**Taylor's Stench Traps and Garbage Baskets,**

And promote the health, comfort and cleanliness of your family. [For description see Mining and Scientific Press, April 8, 1867.] Sold wholesale and retail by TAYLOR & SONS, at No. 429 Pacific street, San Francisco. 15v14tf

**CHICKERING & SONS'**  
**PIANO FORTES**  
Never fail to stand any climate.  
The only Perfect Pianos

They lead in all valuable improvements—all others follow.  
Agents: KOHLER, CHASE & CO.,  
421 Montgomery street, bet. California and Sacramento.  
15v14m12p

## Excelsior Double-Acting Suction and Force Pump.

The Best for Mining, Farming and Domestic Use.

Hooper's Patent, Aug. 15, 1865.

THE EXCELSIOR PUMP is a California invention of intrinsic merit, and as such is being rapidly introduced, and giving perfect satisfaction. At the Mechanics' Institute Fair (1865), it was awarded, for its superiority, a **Premium Medal.**

It is manufactured by California Mechanics, in the most perfect and durable manner. It is remarkably simple in construction, and its valve chest is almost instantly accessible without disconnecting the air-chamber, suction or discharge-pipes. It can be worked at any speed.

Figure 1 is a sectional view of a 6-inch Mining Pump, showing the plunger and hemph-packing, and the valve-chest containing the puppet valves. Fig. 2 illustrates the water-passages and valve seats in the chest.

The following sizes are constantly manufactured of this

## SUPERIOR DEEP-WELL PUMP.

No. 1—Cylinder 2½ inches; stroke, 6 inches; capacity 750 gallons per hour; weight, 80 pounds.

No. 2—Cylinder, 3 inches; stroke, 7 inches; capacity 1,280 gallons per hour; weight, 80 pounds.

No. 3—Cylinder, 4 inches; stroke, 9 and 8 inches; capacity, 2,500 gallons per hour; weight, 200 pounds; with iron frame and slide complete.

No. 4—Cylinder, 5 inches; stroke, 15 inches; capacity 5,420 gallons per hour; weight 500 pounds.

No. 5—Cylinder, 8 inches; stroke, 24 inches; capacity 12,575 gallons per hour; weight, 1,000 pounds.

Nos. 3, 4 and 5 are

made to endure the severe test of use in mines, and are constantly superseding those of other manufacturers. The pistons being packed with hemp, are proved to be far more durable and less expensive than leather.

We manufacture to order 8 and 10-inch Pumps. Also, sell at cheap rates, 5 and 6-inch Brass Pumps for ships.

See illustration of the Valve of this Pump, and further description, in another part of this paper.

For Circulars, or further particulars, inquire of or address J. W. BRITTON & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or lam18

CUSHING & CO., Prop'rs, San Francisco.

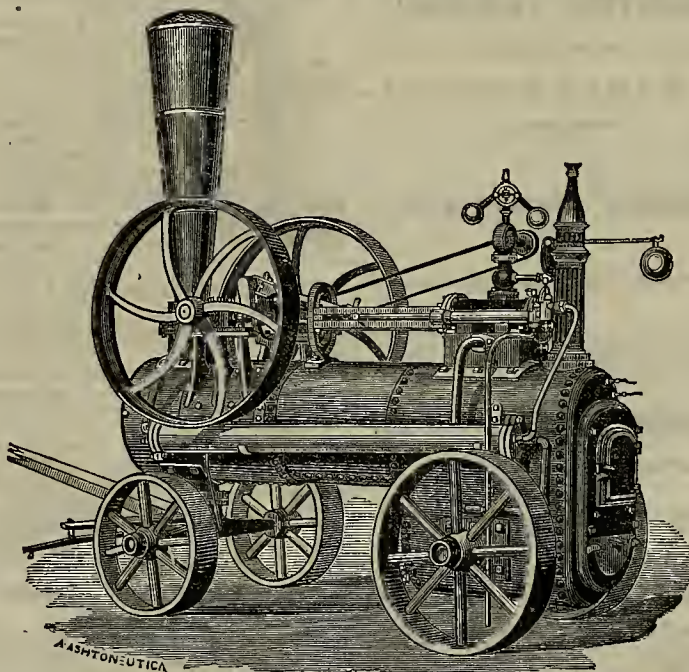
## BAKER &amp; HAMILTON,

IMPORTERS AND DEALERS IN

**Agricultural Implements, Portable Steam Engines, Hardware,**

**Rubber and Leather Belting, Etc., Etc.**

Nos. 17 and 19 Front street, San Francisco, and 9, 11, 13 and 15 J street, Sacramento.



**Wood & Mann's Portable Steam Engines, 6, 8, 10, 12 and 15 horse power,**

With newly invented Water Bottom, which entirely surrounds the fire, grate and ash-pit, forming underneath the ash-pit, as up the sides of the furnace, a three or four inch water space, by which additional heating surface is obtained, the accumulation of sediment around the fire-box or furnace is entirely prevented, and renders it perfectly safe to use near any barn, or in any farm yard, or in any building where a stove would be allowed, as no sparks can possibly escape from the furnace or ash-pit. The sediment has a free passage to the bottom of the fire box, and can be blown off daily by the blow-off cock underneath the ash-pit, by which means the Boilers may be kept clean much longer than under the old system. The great saving in repairs which is effected by the use of these water bottoms, and the constantly increasing demand for them, prove their superiority to any others yet constructed.

## HOADLEY'S THRASHING ENGINES.

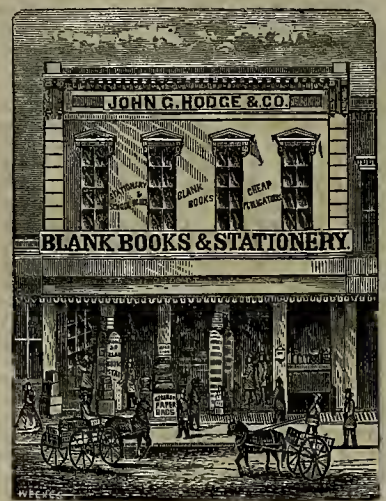
**HITTINGER & RAWSON'S IMPROVED HOISTING ENGINES, 6, 8, 12 & 20-horse power.**

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CHURCH AND STEAMBOAT

BELLS,

TAVERN AND DANCE BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liqueur, Soda Oil, Water and Flange Cocks, and Valves of all conditions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Oango Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZELS

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 6tf

## Foundry for Sale.

A One-half Interest in the

**UNION IRON WORKS,**  
SACRAMENTO,

Owned by William R. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 35 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address

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**Pacific Mail Steamship Co's**  
STEAMSHIPS FOR

**NEW YORK, JAPAN AND CHINA.**

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 31 days.

On the 10th, 19th and 30th of each month that has 30 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 15th or 19th connect with French Transatlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates as given below:

April 10th—MONTANA.....Capt. Jos. Sutton, Connecting with HENRY CHANCEY, Capt. Gray.

April 18th—SACRAMENTO.....Capt. J. M. Cawley, Connecting with OCEAN QUEEN, Capt. Harris.

April 30th—CONSTITUTION.....Capt. W. F. Lapidge, Connecting with the RISING STAR, Capt. Maury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines, can be obtained at the office of the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARGO & CO.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.



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And Patent Solicitors.

SAN FRANCISCO, SATURDAY, APRIL 20, 1867.

VOLUME XIV.  
Number 16.

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**Pure Air for Mines.**  
**The Air We Breathe.**  
**Forty-nine and Sixty-seven.**  
**Better than Freight.**  
**More of the Arizona Mines.**  
**Gas Manufacture**—Endley's Process.  
**Hartman's Improved Safety Reins.**  
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**Yuba Mines in Philadelphia.**  
**Photographic Phantoms.**  
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**MECHANICAL MISCELLANY.**—Testing Rescuer Steel; Aerial Navigation; Hard Hydraulic Cement; Monitor Saw; Iron Floating Dock at St. Thomas; Cement to Fasten Iron in Stone.  
**SCIENTIFIC MISCELLANY.**—Great Astronomical Problem; Lectures on the Antiquity of Man; New Hydrometers; Sound and Color Vibrations.  
**MINING SUMMARY.**—Embracing late intelligence from the various counties and districts in California, Arizona, Colorado, Idaho, Montana, Oregon, Nevada and Washington.  
**Mining Shareholders' Directory.**  
**Mining Stock Sales of the Week.**  
**San Francisco Market Rates.**  
**San Francisco Weekly Stock Circular.**

## Stockham's Rock-Drilling Machine.

We annex hereto an illustration of a hand-drilling machine, for which application has been made for letters patent through this office. It is designed to be operated by two persons, by turning a crank, the drill being forced against the rock by means of a steel spring. The object is attained by constructing a double frame, or any convenient mechanism, by which a universal joint is obtained so as to allow the drill to be pointed in any direction. The drill-stock is extended longitudinally across the frame, A, and has a tappet, J, fixed to the back part of it, behind which is a spring, B, sufficiently stiff to force the drill forward and give the desired blow as soon as the tappet is released by the cam, D. The cam-shaft crosses the frame transversely, and is operated by the crank shown in the illustration. The drill

## California Academy of Natural Sciences.

REGULAR MEETING.

MONDAY, April 15, 1867.

Vice-President Ransom in the Chair.  
Thirty-three members present.  
Messrs. Philip Prior, William Patton, M. J. McDonald, Benj. Smith, and H. Greenwood were proposed for resident membership, and C. L. Anderson, M. D. of Santa Cruz, for corresponding membership. Action on nominations made at last meeting was postponed two weeks.

The collections made by different members during the recent visit to Angel Island, were exhibited and commented upon.

Dr. Kellogg exhibited specimens of the famous intoxicating root of the Sandwich Islands—the Kawoondoo of the natives; the Piper methysticum of the botanists.

Kawine, the acrid, resinous principle of the kava root, has also a volatile oil, which parti-

vanced to protect piles from its ravages were commented upon by Messrs. Silliman, Behr, Bolander, Hubbard, Yale and Nystrom, the latter remarking that piles of the wood of the palm tree were used in Mexico, and were exempt from the ravages of the Terebo. Mr. Bolander remarked that the wood of the coniferous trees was preferred by them to all others.

Mr. Falkenau read a well written paper upon "The Spirit of the Age and its Influence on the Development of the Natural Sciences."

Mr. Bolander exhibited specimens of an Apocynum, or hemp, found in Round Valley, Mendocino county, on moist land, subject to overflow. It increases rapidly by stoloniferous roots, and is therefore extremely difficult to destroy. The Indians make extensive use of its fibers for fish-lines, etc. The specimens before the Academy were collected by J. S. Silver at Humboldt Valley, Nevada.

Mr. Stearns submitted the following resolution:

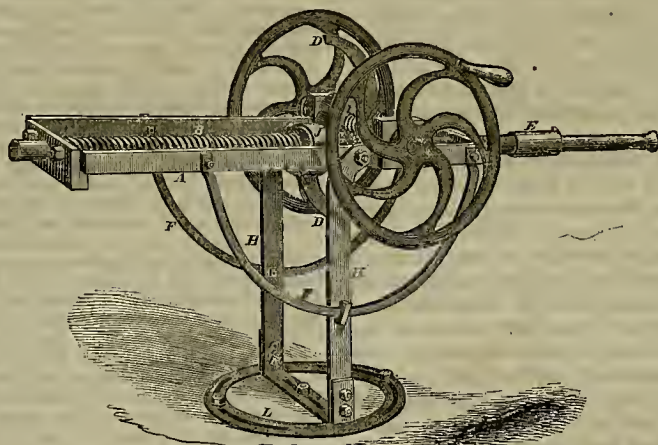
*Resolved*, The California Academy of Natural Sciences hereby expresses its thanks to Major James T. Hoyt for his kind invitation, and to Gen. John A. King for his courtesy to its members during their recent visit to Angel Island; and the Secretary is instructed to forward a copy of this resolution to each of the gentlemen named therein.

The subject of another field meeting came up, and it was resolved to visit the country in the neighborhood of the Twelve-mile House in San Mateo county, where there is a fine outcropping of fossiliferous rock and other attractions for the botanists, entomologists, etc.

**MORE OF THE ARIZONA MINES.**—Mr. W. T. Porter, formerly of Washoe, and more recently of Arizona, where he has been engaged in superintending the construction of the smelting works of Martin & Co., on Williams' Fork, a branch of the Colorado, brings very flattering reports from the copper and silver mines of that locality. He represents the climate as delightful during the greater portion of the year, and the field for mining operations inviting and extensive,—capital, however, being a *sine qua non* to the full and complete development of its varied mineral resources. The copper ores are said to average 25 per cent., some of it trebling this amount. The Great Central, Wm. Thompson, superintendent, with two small furnaces, and laboring under the difficulties arising from suitable lining for the same, have been enabled, during the past year, to smelt out in the neighborhood of 40,000 pounds of copper, running to about 95 per cent. With their large furnace, recently built, so soon as the proper fire material arrives on the ground, they will be able to smelt from fifteen to twenty tons of ore per twenty-four hours, producing about four tons of 95 per cent. copper. The lode is well developed and clearly defined.

The Planet mine, under the direction of Capt. Ashley, is also represented by Mr. Porter as containing immense masses of very rich ore, and as exceedingly promising, if not the most valuable ever discovered.

**CONTRIBUTIONS FOR OUR CABINET.**—We have in type notices of quite a number of mineral contributions, which are crowded out this week.



STOCKHAM'S PATENT ROCK-DRILLING MACHINE.

is firmly set in the socket, E, fed forward as fast as necessary, and turned by a screw in the cam-shaft, imperfectly shown at I. FF, represents the radius for elevating or depressing the drill, and L the bottom radius for setting the drill to the right or left.

As will readily be seen, this machine may be operated with unskilled labor. We understand that two men are now doing as much work in a claim on Deer Creek, above Nevada, with one of these machines, as five could do with merely the sledge and drill. A saving of fifty per cent. is also effected in the waste of steel, usually destroyed by the sledge, but saved in the use of this machine by the blow being given by the force of the spring. The inertia of the drill is overcome and its own weight made to do the drilling, assisted by the above-mentioned spring. The labor is found easier than by the old way. A machine is now set up for inspection, to which the mining public are invited, at H. J. Booth & Co's machine works, corner First and Mission streets. For further particulars and price, inquire of V. Cushing, agent, at the above place. The price of the machine is such as brings it within the reach of almost every individual miner.

The Fulton Foundry has recently forwarded two of Hunter's amalgamators to the Pittsburg mining company, at Nevada city.

cipates in its effects in gonorrhoea, gont, rheumatism, dysentery, diarrhoea, etc. When used as a remedial agent, it is necessary to continue its use for a period of from ten to fifteen days; and when the system was under its control its effect externally could be detected in the bloodshot eyes of the patient.

Dr. Behr remarked that the natives chewed the root and spit the juice into a trough, the expectation being allowed to remain until fermentation had taken place, when it was drunk as a beverage, and was highly intoxicating.

Prof. Silliman read an interesting paper on a peculiar mode of the occurrence of gold and silver in copper and iron pyrites in the foothills, especially at the Banker mine, near Lincoln, and at Quail Hill, near Copopolis.

Mr. Knight presented a specimen of polished serpentine taken from the Dry Dock at Hunter's Point.

Prof. Silliman remarked that it was a fine specimen of serpentine, and that it would be valuable for ornamental purposes and for the inside work of houses, but it is not suited for the exterior of walls.

Dr. Cooper made some interesting remarks upon a huge specimen of *Parapholas California*, a large pholad or borer. This mollusk is sometimes known as the date fish, and is highly esteemed by epicures. There are several species of pholads on the coast of California.

Mr. Stearns called the attention of the members to the fact that the Terebo, so destructive to the piles in city wharves, was related to *Parapholas*, being a pholad and borer. The various plans and theories ad-

## Hartman's Improved Safety Rein.

In another column of to-day's issue, will be observed an illustration which shows the arrangement and mode of application of a safety bridle, adapted for use as a driving or riding rein, the former being represented in the engraving. We have been shown a pair of these reins which is of very neat construction, and would scarcely appear to the casual observer to be anything different from the ordinary check-rein. The safety rein starts from the inside of the check piece; runs through the ring of the bit, then through the pulley near the top of the head-stall, thence entering the main lines at the terrets. The main lines, from that point, being made hollow, the safety cord readily passes through them to the hand-piece, where they are seen to present two small loops, by which they can readily be operated by the driver whenever necessity requires. By drawing slightly on the safety rein, the bit is taken up into the upper or fleshy part of the mouth, reining the head up instead of against the breast. By this means it is claimed that the most vicious horse can readily be brought under perfect control in a moment of time. It is as readily adjusted to a double as to a single harness, and with the same effect, each horse being checked separately, the checking being confined to any one, or all, at the option of the driver.

State and county rights for the above are for sale for the Pacific coast and all territories belonging to the United States, by Reithman & Sain, 615 Sacramento street.

**MINERS' LIEN—A GOOD LAW.**—In February last, the Legislature of Nevada passed an act supplementary to the Mechanics' Lien Act of that State, by which all miners or other persons performing labor to the amount of \$20 upon any mine, whether of quartz or "pay dirt," should have a lien upon the claim, together with the improvements thereon. This is just and right. "The laborer is worthy of his hire;" whether he be a carpenter or a miner. In this matter our sister State has the advantage of us.

**CAPT. WORDEN**, the *Monitor* hero, has accepted the invitation to meet his friends and the citizens of San Francisco, at the rooms of the Board of Supervisors, and has designated Thursday, the 25th inst., at 12 o'clock, M., as the time.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Boiler Destruction—Its Causes and Remedy.

EDITORS PRESS:—The subject of the present communication is not of that class by which a man can get either fame or profit; but every man of science ought to consider it his duty to bring before the public his experience in any branch of science whereby the community can be benefited. In England there are several associations which are continually in search of the causes of, and means to prevent, steam-boiler explosions. Their labors are not rewarded by handsome presents, nor are even their names brought before the public; they appear to be inspired by a higher motive than common reward; their efforts are for the common good, and through their labors many valuable lives and much property has been saved.

What has ever been done in California to prevent steam-boiler explosions? Nothing. It is true we have a United States law on the Statute Book, which, when properly carried out, may be of considerable value as a safeguard, especially for marine boilers. But I have lately seen a boiler in this city, and in a populous part of it, too, where the iron was so much eaten away as hardly to leave a sound spot. I am not aware that it is the duty of the Steamboiler Inspector to look after such matters; but if it is, he ought to attend closer to his business.

A boiler explosion is a terrible thing. It usually carries destruction to life and property when it occurs; hence, we ought to study its causes, and endeavor to prevent its occurrence.

During the year 1866, I had occasional opportunities to examine steam-boilers, which, though not a year old, were nearly destroyed by rust, more particularly at the Mount Diablo coal mines. The water there is generally impregnated with sulphate of iron, etc., which, on being heated in the boiler, produces sulphuric acid, which acts rapidly on the iron, and the consequence is that if a fatal explosion does not occur, a gradual destruction of the boiler is inevitable. I was called upon to analyze the water used for the boiler at one of the coal mines of that neighborhood, which had a boiler so attacked that it began to leak badly. I advised the neutralization of the acid in the feed water. My suggestion being acted on, the same boiler is now, after six months use, as good as can be desired.

The remedy in such cases often lies near at hand, if we only know how to apply it. Every one who uses a steam-boiler, and wishes to save it from early destruction, ought to know what the water holds in solution before they use it.

Besides the impurities contained naturally in the water, there are often other circumstances which are the causes of boiler destruction. One of these cases, of a most singular character, has recently been communicated to me from Germany, and may be described as follows:

Six boilers, thirty feet long by six feet diameter, were erected for the purpose of driving the blasting engines of some new iron furnaces. In order to try the capacity of the machinery, it was to be tested for a fortnight before the fires of the blast furnaces were lighted. All went off as could be wished—the entire plant of machinery running for a week all right; but on the eighth day the trouble began. One boiler began to leak at several rivets; the leaks were caulked, and it was all right until next day, when two other boilers showed the same defect; the tenth day the remaining three began to leak like the former; on the eleventh day the caulking and all other remedies were fruitless. The fire-place was changed to the other end of the boiler, with no better result. On the twelfth day the boilers began to leak so badly that the fire was extinguished. The boilers were then carefully examined inside and outside; the iron and workmanship all seemed right; the water used was analyzed, and nothing injurious was found in it. Another new boiler was constructed of the best of iron, for a test. After

ten days working, that was destroyed like the first six. On close examination of the contents, it was found that no incrustation had taken place, except on the bottom of the boiler, where was found a soap-like sediment, which proved to be a fatty acid, originating from the use of the condensed water. This fat covered the sides of the boiler with a very thin film, and whenever the hoiling water within the boiler touched it, the water was repelled with such force and noise that it often sounded as if iron balls were thrown from one side of the boiler to the other.

Further investigations demonstrated the fact that when water was used as it came from the well, without the use of the condensed steam, all went on well; and that it was the oil only which caused all the trouble encountered by preventing the water from coming in contact with the walls of the boiler, thus giving the fire ample opportunity to work their ruin.

I have often seen in California that the condensed steam was led into the feed water, consequently carrying along with it a large amount of oil, which ought to be avoided whenever possible. The oil as well as the water ought to be carefully analyzed, the importance of which is too apparent to need any further mention. J. MOSHEIMER.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

NUMBER ONE.

The vast extent of territory coming under the general name of Reese River country, has been gradually explored during the past two years till it is found to be literally one field of metalliferous veins, producing the precious metals, especially silver, in the greatest profusion, and the inferior metals in great abundance and variety. The northern and central portion of this silver region, which I will mark out by the natural boundaries of Humboldt river on the north, the Colorado on the south, and Utah on the east, and comprising the whole of Lander and Nye counties, is traversed by parallel ranges of mountains running north and south. These ranges are narrow and uniform in appearance at a distant view, and generally covered with a growth of nutpine or piñon, the most westerly ranges having the heaviest growth. Between these parallel ranges lie valleys of great extent, generally quite level, except along the foothills of the ranges, where it is undulating and everywhere covered with artemisia or sage brush; wherever a mountain stream reaches down into these foothills, highly productive land is found along its borders. The ranges and foothills, from their base to the highest peaks, are everywhere covered with a luxuriant growth of a great variety of grasses, prominent among which is the hunch grass, the most nutritious known.

In the southern portion of this region the mountain ranges are more irregular and detached, frequently quite destitute of timber, but everywhere abounding in sufficient grass to make this whole region pre-eminently a grazing country.

It is in these mountain ranges that the rich silver lodes occur; none are barren in this respect, although there are long reaches, in all, that produce no mines or veins of quartz. Each range lays claim to superiority in richness of its silver lodes; but an impartial visitor will scarcely know to which to give the preference; certainly all contain many mines that are at least locally famous.

AUSTIN AND VICINITY.

The public are too familiar with the discovery and progress of this far-famed district, to need any extended notice at this late day. It was here that the first silver was accidentally discovered in May, 1862, by W. M. Talcott, one of the Pony Express riders, when that institution was the wonder in rapid communication between California and the East. The district was organized on the 10th of May. Soon after, the discovery became whispered about, and thousands rushed here from Virginia City, and a little later from California and other parts. A town of four or five thousand inhabitants sprung up like magic, built along the narrow cañon between the two hills that contain the principal lodes. Hundreds of lodes were located in this, which was called

Reese River District, and the adjoining district of Amador on the north. In a short time several mills were erected, "feet" changed hands at enormous prices, and for some time all went swimmingly. But the reaction that must inevitably follow such insane rushes came, and none too soon for the future welfare of Austin. It became whispered about that the lodes did not extend down; in fact, among those on the "inside" it went from mouth to mouth that the rich lodes were already worked out root and branch. Then everybody was on the street, armed with his certificates of stock, anxiously looking for a buyer. Meantime, a few persevering miners were slowly pushing down on their works, and it soon came out that the lodes did run down. (I will mention among those entitled to credit for their perseverance in this respect, the then owners of the Oregon and North Star mines). Austin was saved, and has to this day flourished with varied degrees of prosperity. Their greatest mistake has been in erecting numerous costly and substantial quartz mills before the mines were prepared to supply them with ore; as it is now established that the reliable ores lie below the water line. Austin is now in the ascendant. The system of vertical shafts sunk to great depths, has been inaugurated, and her magnificent mills will ere long bristle with industry. Union and Lander hills will at no distant day be crowded with hoisting works bringing to the surface the wonderfully rich and beautiful ruby ore, for which they are so justly famous. We will now proceed south along the low undulating sage-covered foothills of the Toiyabe range to

BIG CREEK.

Twelve miles from Austin we come to a broad cañon, through which flows a beautiful crystal stream. In the exciting days of 1863, hundreds of prospectors and speculators flocked here; a succession of towns—Watertown, Cañon City and Montrose—were laid out and partially built up. Before the crazy inhabitants had time to look over the hills and determine whether there were mines here or not, two quartz mills were in course of erection, and it seemed to be the prevalent idea that all the hills of the Toiyabe would alike yield the shining ore. Bare lots along the main street sold readily for \$200 to \$700 each. Several hundred locations were made, claiming quartz lodes, which, in most instances, only appeared, to a sane man, on the written notices, or in the imagination of the claimants. The town was soon flooded with nicely engraved certificates of stock, representing shares in the various incorporated "hills" and "wild cats" of the district, and the streets swarmed with a motley crowd of sharpers and pioneers, each seeking out his victim from among the better dressed, but verdant new-comers. Immigration was for a time turned from Austin. September and October, 1863, found Big Creek in a fair way to outstrip Virginia City in growth and size. In December, the scales began to fall from the eyes of the inhabitants, the crash came, and the glory of Watertown, Cañon City and Montrose, departed forever, except in the line of vegetable and pig ranches, for which they are admirably adapted; for truly, Big Creek Cañon may be called one of the oases of Central Nevada.

At the lower end of Watertown now stands the Parrott mill, a fine structure of twenty stamps, erected in 1863-4. This has been idle, with the exception of occasional spasms, since its completion. There is talk of removing it to Northumberland or Hot Creek, where it might at once enter a season of usefulness and enrich its owners.

[To be continued.]

BILLIARD TABLES, of a style both new and beautiful, more particularly as to the carved work, the form and varied color of the feet, as well as in the general harmony of the whole, may now be seen at the manufactory of Messrs. Strahle & Hughes, 567 Market street. We understand that orders for upwards of thirty of these fine specimens of workmanship—all neatly furnished with the Phelan patent cushion—have been recently received, coming chiefly from the Bank Exchange and Cosmopolitan Hotel, in this city, and from the Union Hotel at Sacramento. But, as in the "human form divine," a well-turned ankle is often the great object of attraction, so in this case, the foot, made as it is of the finest California laurel—retaining in part the natural color of the wood; in other portions stained so as to resemble rosewood or mahogany—with the carving most artistically executed; and, viewed in connection with the pleasing contrast of each varying tint, presents as a work of art a picture of beauty but rarely seen.

[Written for the Mining and Scientific Press.]

## The Question of "Gravity"—Reply to "A. C. D."

EDITORS PRESS:—The error into which your correspondent "A. C. D." falls, on the subject of differences of weight at different points of the earth's surface, is easily detected. He is correct in saying that attraction varies as the quantity of matter in the attracting bodies, and their distance from each other; but he errs in estimating that distance.

There is, in every body, a point called the "center of gravity," which has this peculiar property, that the attraction of the whole mass acts precisely as if it (the mass) were all collected in that one point.

In figures of regular shape and density this point is at their center of figure; hence, the center of the earth is also its center of gravity, and that is the point to measure from in all calculations on the earth's attraction.

Now, the polar distance from the center is 3949.5 miles, and the equatorial distance 3962.5 miles, and as attraction (or weight) decreases as the square of the distance, we have  $\frac{(3949.5)^2}{(3962.5)^2} = .998449$ , which decimal

represents the weight at the equator of a body weighing one pound at the pole; in other words, 1,000,000 pounds at the pole would weigh but 993,449 pounds at the equator, owing to increased distance from the center of the earth.

There is an additional loss of weight at the equator—about 1.295th—owing to centrifugal force caused by the revolution of the earth on its axis; and when this is also deducted, we find that a mass weighing 1,000,000 pounds at the pole would weigh only 990,060 pounds at the equator.

All of the above can be demonstrated as conclusively as any problem in geometry, but it would be absurd to fill the columns of the Press with the contents of a textbook. Indeed, a little patient study of the whole subject in some elementary work would have removed all misconception, and saved discussion in your columns as well as those of the *American Artisan*.

MACHINIST.

San Francisco, April 15, 1867.

WHAT NEXT?—We have received the circular of the "United States Mutual Piano Forte Association," of New York. It proposes to furnish a first-class instrument, at a low price, payable in installments, to any one who chooses to connect himself with the association.

The evidently philanthropic motives of the getters-up of this circular, are beyond praise. Those benevolent individuals, who inaugurate "gift enterprises,"—in which tin whistles and brass watch-chains are distributed with such reckless disregard of expense, as prizes, to all those victims who have paid one dollar apiece for their tickets—have become conscious that that sort of thing is "played out." Some new dodge is consequently necessary; else, like Othello, "their occupation's gone."

Lest the animus of this remark may be mistaken, we hasten to say that we do not mean to imply that the scheme under consideration, is merely a new phase of the aforesaid species of swindle. Although the offer of a \$600 piano for \$360, might seem slightly suspicious to an evil-minded cynic, we believe the thing to have been prompted by purely disinterested motives. A true music lover, of course, desires to see a piano placed in every hovel in the land. Nevertheless, painful as it may be, we feel ourselves constrained to say to this association, which has proposed to advertise the arrangement in our columns:—It won't do, gentlemen! It is no go! Californians are not so "jolly green" as all that! Besides they don't make purchases by installments. When a Californian wants a piano, he just takes the money, and goes and buys it!

The circular announces the capital stock as \$50,000, to be increased to \$300,000. When such increase is to be made, is not stated; but probably as soon as the accumulated contributions of a sufficient number of soft-heads will permit! We would advise the company to confine its operations to the Atlantic side of the Continent.



## Mechanical.

**TESTING BESSEMER STEEL.**—At a recent meeting of the Association of Foremen Engineers, Loudon, Mr. Naylor described his method of testing steel. It had been his fortune to have much to do with Bessemer steel, and he had found some uncertainty in its duration. It was always submitted, under his direction, to a variety of tests. For example, with regard to rails, his plan was to take a piece of rail, as a sample of a batch, five feet long, and to rest it on supports three feet apart. A weight of one ton was then allowed to fall through thirty feet, and strike it midway between the supports. If the rail broke under the blow, all the steel cast that day for the same purpose was rejected. Another test was to place the same rail, if unbroken, on the three-foot bearings and submit it to a strain of thirty tons; if the deflection under this ordeal exceeded half an inch, rejection followed. For testing tensile strength a bar was drawn from twelve inches to thirteen inches and a half long. A fourth test consisted in the planing of a bar to three-quarters of an inch square, and then twisting it to one turn in two inches and a half. Tests were also applied for ascertaining the power of Bessemer steel to resist compression, etc.

**FOR AERIAL NAVIGATION.**—M. Gifford has constructed a steam engine for aerial navigation, whose weight bears a very small proportion to that of ordinary engines of equal power. The first model, constructed under his superintendence, has been worked with success at a pressure of 900 pounds to the square inch, and he is sanguine that he will be able to increase the pressure to 3,000 pounds. It is thought that this engine will be able to force a balloon of an elongated shape, at the rate of thirty miles an hour through a calm atmosphere—carrying three days supply of food and water.

**HARD HYDRAULIC CEMENT.**—The following recipe is given for a cement which it is said has been used with great success in covering terraces, lining basins, soldering stones, etc., and everywhere resists the filtration of water; it is so hard that it scratches iron. It is formed of sixty-three parts of well-burned brick and seven parts litharge, made plastic with linsed oil. The brick and litharge are pulverized; the latter must always be reduced to a very fine powder; they are mixed together, and enough of linsed oil added. It is then applied in the manner of plaster, the body that is to be covered being previously wet with a sponge. This precaution is indispensable, otherwise the oil would filter through the body and prevent the mastic from acquiring the desired hardness. When it is extended over a large surface, it sometimes happens to have flaws in it, which must be filled up with a fresh quantity of the cement. In three or four days it becomes firm. If its advantages have not been overrated, it must be a very excellent cement for making the joints of aquariums water-tight.

**A MONSTER SAW** has been on exhibition in New York, intended for the Paris Exhibition, which is said to be the largest ever manufactured. It is 88 inches, or eight feet four inches in diameter, of one solid plate, from the works of Messrs. W. Jessop & Sons, England, and weighed, before finishing, 500 pounds. The saw is one of Emerson's patent, having movable teeth which are secured in the plate by V-shaped grooves with corresponding tenons and one rivet to each tooth. The thickness of the finished saw at the center is No. 2 Stubbs' wire gage, and at the edge, No. 5. The saw was made by the American Saw Company at their works at Trenton, N. J. It will be a prominent feature of American industry at the Paris Exposition.

**WHEN TO PAINT.**—Experiments indicate that paint on surfaces exposed to the sun will be much more durable if applied in autumn or spring, than if put on during hot weather. In cold weather it dries slowly, forms a hard, glossy coat, tough like glass; applied in warm weather, the oil strikes into the wood, leaving the paint so dry that it is rapidly heated off by rains.

**EXPERIMENTS** on wheat under glass, prove that the weevil retains life longer than any other insect when deprived of air.

## Iron Floating Dock at St. Thomas, West Indies.

We are indebted to Capt. J. B. Caldebeck, now en route per Colorado for Singapore, as agent at that port of the Peninsula and Oriental Steam Navigation Company, for the following very interesting notice of the new dock at St. Thomas, it having been minutely inspected by that gentleman a few weeks ago, when on his way to this country:

This fine structure will be opened in June of the present year, and will be of incalculable value to the shipping interest; vessels damaged perhaps in the very neighborhood of St. Thomas, having hitherto been obliged to go to Havana, frequently incurring great risk on their way, in addition to a serious loss of time.

The Dock is being constructed from the designs of the English Civil Engineer, Mr. F. J. Bramwell, the Constructor being Mr. N. Scott Russell, of the Bute Iron Works, Cardiff, South Wales. Mr. Patrick is the Superintending Engineer for putting the fabric together at St. Thomas, and Mr. Alexander Wylie, for many years a Chief Engineer in the service of the Royal Mail Steam Packet Company, has been appointed Dock Master.

The Dock is open at the ends, and the sides, instead of being plated up solid, are composed of latticed iron girders, in six bays or divisions, thus securing ample ventilation in a hot climate, and affording a very elegant and graceful appearance. The bottom is formed by six pontoons, all of the same dimensions, viz: 50 feet in length by 100 in breadth, each one of which can be disconnected and placed in the Dock for repairs or painting; thickness of plating of pontoons, one-half inch, and the bottoms inside are coated with Portland cement two inches thick. The Dock is 300 feet in length upon the blocks. The outside width is 100 feet, and breadth, inside, 70 feet. The weight of the material is 3,300 tons; and 4,600 tons will be lifted in two hours and a half. A ship drawing 20 feet will be taken upon the highest blocks.

There are, independent of the pontoons, six water-tight iron floats, or small pontoons, on each side, each 49 feet long, 11 wide and 5 feet deep. These floats are intended as regulators for the adjustment of the trim of the dock when falling or rising. They are worked by long screws reaching to the upper part or platform of the lofty frame-work, and are turned by steam engines placed on the platform. These floats being situated in the wings, tend also to secure the stability of the fabric as far as listing over on one side is concerned.

There are two pumping engines, 12-horse power each, six pumps being fitted on each side; their diameter is 17 inches; stroke, 2 feet—all chambers, buckets and clacks being made of brass. In order to form a cradle adapting itself to the lines of the various builds of vessels that may enter the dock, bilge shores of East Indies teak wood, 12 inches square, are placed 15 feet apart for a length of 180 feet. These shores, or rather frames of a cradle, are supported by heavy iron legs, the heels of which are caught, acting as pawls in horizontal pawl-bits located on bottom of dock, and placed at right angles to the keel of the vessel.

The Dock will be moored in six and one-half fathoms in the "Great Careening Hole," that position affording the most sheltered berth in the harbor, and in which the Danish men-of-war find the most perfect security during the hurricane months.

**CEMENT TO FASTEN IRON IN STONE.**—A German Professor has found out a cement for fastening iron in stone which, in forty-eight hours, becomes nearly as hard as the stone itself. This consists of six parts of Portland cement, one part of nicely-powdered lime, burned but not slacked, two parts of sand, and one part of slacked lime. This, when well mixed, and reduced to one mass of cement with the necessary quantity of water, is put in the crevices or the openings of the stone and the iron, both being previously damped, and after forty-eight hours the iron will be found thoroughly and lastingly fastened in the stone.

**A MALLEABLE CAST IRON** of great strength, toughness and hardness, is reported to be produced by a secret process by McHaffio, Forsyth & Miller, of Glasgow. It has been used under important contracts for propeller screws, mast tops, hawse pipes, etc., etc. The teeth of pinions cast by this process have been hammered down to the solid mass without cracking.

## Scientific Miscellany.

## Great Astronomical Problem.

Among the most important "unfinished problems of the universe," one of the chiefest is the search after the great sun or crater, about which all other orbs and systems are supposed to be revolving. Admitting that there is such a motion in the stellar universe, can this grand central body or system of bodies be found?

When Sir William Herschel announced that he had discovered a point in the heavens toward which our solar system was sweeping, even the boldest of astronomers were unwilling to believe it. It was a pioneer announcement, so novel and so astounding that the world was unprepared for it. Yet, the keen eye and careful observations of that eminent astronomer had detected a most important fact, which has since been fully demonstrated, and is now received as beyond a question.

The idea of such a movement at once set the astronomers of Europe upon the *qui vive* to determine its import; and the German astronomer Maedler soon put forth his grand conception of a common center or gravity, and the fact of such an existence has since been universally acknowledged. Where and what it is, is now the great object of research—one of the present "great unfinished problems of the universe." Can it be found? Philosophy to-day answers in the affirmative, even if we are forced to admit that there is no central controlling body. The time will most assuredly come when this question will be answered fully, and in the affirmative. Years, perhaps centuries, may roll away before that day arrives; but the exact solution of the problem has been commenced, and the work will be carried steadily on, until all the data necessary to master it shall have been collected. The materials for that solution are constantly increasing, and will continue to accumulate from generation to generation. It is no objection, no discouragement, that the final accomplishment is afar off.

The old astronomers who once stood upon the walls of Babylon, or upon the pyramids of Egypt, and waited, night after night, the varying phenomena of the heavens, carefully timing and noting the eclipses of the sun and moon as they came and went, did not labor for their own day and generation. They felt an inward assurance that by a constant watching for and careful noting of the recurrence of the great cycles performed by sun, moon and stars, something of importance would ultimately be gained to after generations. It was by such patient waiting and watching that astronomy received its first impulse, and the foundation was laid for that grandest and noblest of all the sciences which have been opened up to man; one which is now so simplified, that the merest school-boy can he readily taught in a few minutes that which has cost the closest scientific research of generations of philosophers.

So it is with the patient watching and waiting of astronomers of the present day. Notwithstanding the wonderful advances which have been made in this science during the last century and a half, they are still looking for, perhaps, equally grand and important results in the future, to accomplish which they shrink from no responsibility and think it no hardship to labor, although the fruits of those labors may be only for those who are to take our places hundreds or thousands of years hence. In the language of the lamented Mitchel: "The great and mighty problem of the universe has been given to the whole human family for its solution. Not by any clime, not by any age not by any nation, not by any individual man or mind, however great or grand, has this wondrous solution been accomplished; but it is the problem of humanity, and it will last as long as humanity shall exist on the globe in which we live."

REV. E. BURGESS has just closed a course of lectures on the Antiquity of Man, before the Lowell Institute, of Boston, which received a unanimous vote of thanks from his audience. The *Congregationalist* of that city alludes to the lectures as follows:

Mr. Burgess sustained the Mosaic records in regard to the origin and antiquity of the human race. He prefers the chronology of the Septuagint, which, according to Hales, places the date of the creation of man at about B. C. 5411, and that of the Flood at B. C. 3153; he would vary these numbers a little, but regards them as approximately correct. He showed that the records of all historic nations—as the Egyptians, Greeks and Romans, Chaldeans, Hindus and Chinese—both historical and monumental—contain nothing which necessarily conflicts with the Mosaic chronology, but much which directly corroborates it; there is nothing in the records of any heathen nation that set aside, or even render doubtful the time of man's creation. If that date is not correct, there is nothing outside the Jewish Sacred Scriptures which can correct it.

In the argument from Language and Ethnology it was shown that there are converging lines—linguistic and ethnic—that point to central Asia as the center from which the nations of antiquity migrated to the seats they occupied when they first appeared on the stage of history. The argument from Mythology led to the same general conclusion. All the so-called systems of ancient mythology had a common origin, and that origin—in its origin and essential elements—was in the facts, persons, and events described in the Mosaic records. One lecture was occupied in the discussion of the Unity of the Human Race, in which the theory of Agassiz in particular, which makes eight centers of creation for mankind, was reviewed. That distinguished naturalist, however, regards all the varieties as constituting only one species.

The closing lecture was occupied with the argument from geology. A few of the strongest cases that have been relied upon as proving a high human antiquity of man were examined, and it was shown from indisputable facts, and from the opinions and admissions of geologists themselves that these cases involve so many elements that they do not *prove*—or even render probable—the high human antiquity they are alleged to establish. In short, the "conclusion of the whole matter" was, that there is nothing among the facts of geological science, which should be permitted, in regard to the commencement of human existence on earth, to set aside the chronology of the Mosaic records.

**NEW HYDROCARBONS.**—When cannel coal is distilled, and the product is treated with acid, the oils belonging to the marsh gas and benzol series are separated, and a black, tarry mass remains. From this mass a brown liquid, having an offensive smell, may be distilled at a temperature between 300° and 400°. Schorlemmer, by repeatedly distilling this liquid with caustic alkali and with sodium, has obtained a new series of hydrocarbons, which differ from the homologues of olefant gas by the addition of two atoms of carbon. Taking the weight of an atom of carbon at twelve and hydrogen at one, the new bodies are represented by 12 C 20 H; 14 C 24 H; 16 C 28 H. The old nomenclature provides no names for these compounds.

**SOUND AND COLOR VIBRATIONS.**—It is said that the deepest note which the human ear perceives as a continuous sound, is produced by sixteen vibrations in a second; the acutest by 43,000. The extremes of color are red and violet; the former given by 458 billions of vibrations per second, and the latter by 727 billions. The relative velocities of light and sound, and the relative refinement of the media through which their effects are conveyed, are illustrated by this comparison.

**THE FREEZING PROCESS.**—In obtaining concentrated mineral waters by the freezing process, the water is kept in a constant agitation during the process, by which the part frozen collects in the form of a milky snow. After this has been separated, the balance of the water containing all the substances is then still further concentrated by boiling.

**PURE IRON**, when exposed in a finely divided state to the action of the atmosphere becomes red hot. In other words, so very strong is its affinity for oxygen, that when reduced to powder it will ignite spontaneously.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**INTERESTING TO SHOE MANUFACTURERS.** Evan T. Rogers, of San Francisco, has made application through the MINING AND SCIENTIFIC PRESS PATENT AGENCY, for a patent for a new invention, designed to do away with the old system of rule and lines in making counters and shapes for machine work or hand sewing or stitching, so that, by the use of this device one man will be able to perform more labor than two by the old method, and do it much easier and more correct. The marking is done by a stamp and effected at one blow.

**LATHROP'S HARVESTER.**—While at San José last week, we had the pleasure of seeing this important California invention. It is simple and compact, and appears to be all that could be reasonably desired. Patents have been applied for. Two of Mr. Lathrop's sons are now in the Atlantic States making arrangements for selling patent rights and manufacturing the machines. We shall in due time give a full description of this harvester.

Mr. Lathrop has also a new gang plow, made without land sides, the plow being kept to land by the aid of a rotary coulter.

## PATENTS RECENTLY ISSUED.

62,749.—**ORE CONCENTRATOR.**—Morgan Hungerford, San Francisco, Cal.:

I claim, 1st, A pan cut in two and dropped about one inch, so that the lowest depression shall be two inches, more or less, below the ridge or angle of such concentrator, substantially as described and for the purpose set forth.

2d, The slots or outlets, F, F, above the line of the groove around the inner rim, as described.

3d, The outer rim, G, with stops, H, H, also the discharge holes, J, J, under the pan around the said outer rim, substantially as described and for the purpose set forth.

The above is an improvement on the Prater & Hungerford Separator, for separating sulphurets of gold, silver or copper from their sands and other matter from which it is desirable to free them. The nature of the invention consists in the employment of a circular disk, cut in two, each side dropping about one inch, more or less, from the central line of division, with a groove around the periphery, and with an outer rim around the pan, said ring being provided with stops placed at opposite sides. The inventor claims that the efforts heretofore made to concentrate sulphurets by means of a current of water passing over a convex disk, have, in a measure, been unsuccessful, from the fact, among others, that a large portion of the sand and debris which is contained in them is carried into the amalgam or quicksilver channels, from which it must be afterwards separated by a still more laborious process, or go to increase the quantity of useless matter in the sulphurets, and add to the cost of treating them for such silver, gold or copper as they may contain. The object of the above invention is to obviate this difficulty, and thereby simplify and cheapen the process of obtaining the metals from their combination of sulphur and other base matter.

672,766.—**PLOW IMPROVEMENT.**—Don Carlos Matteson and Freeman P. Williamson, Stockton, California:

We claim, 1st, The curved standard, A, with the lug, B, and the offsets, D and E, substantially as and for the purpose described.

2d, The curved mold-board, F, with its two complete edges, H and H', attached to the standards as shown, and operated substantially as and for the purpose herein described.

The nature of the above invention is to provide an improved plow, which is made with a mold-board, having a double edge, and so constructed that by simply removing the two retaining bolts it can be reversed, and a new and sharp edge brought into use. The standard which holds it to the beams has also a peculiar construction, which, together with certain offsets, prevents it from becoming clogged with weeds, while by means of a prospecting lug on its top, the attachment to the beam is rendered much firmer. By constructing a plow in this manner, greater strength is obtained, the mold-board will always have a sharp edge, and can be easily replaced, when necessary, while as an article of manufacture it can be afforded much cheaper than those of the ordinary construction.

**THE PEARL SHIRT FACTORY.**—Martin L. Haas, proprietor of the above named works, opened with the new year, at the corner of Sansome and Halleck streets, on a basis both substantial and permanent, and is confined exclusively to the manufacture of the white "Pearl Shirt"—the material used being of the best and finest linen and cotton the market affords. Its success is no longer problematical. In comparison with some of the favorite brands of the East, such as the "Star," "Medal," "Davis & Jones," and other popular styles, it has fully stood the test, having been pronounced by the trade in every respect equal to the latter, even as to the appearance of the laundry-work, which has hitherto been the most difficult of execution. When quality of material, sewing, style, fineness of finish, and cheapness, are taken into consideration, it is believed to be far superior to anything of the kind imported. Already has the establishment been able to furnish at least fifty operatives with steady employment, and the market with 500 dozen shirts per month, having at the same time facilities for increasing the number of employes, and the supply of its pearls in proportion to the demand of the trade. The machinery, for instance, for plaiting the bosoms, will perform with ease the work of ten hands, while with an improved machine of his own construction for rolling and laying the cloth to the required number of thicknesses, which is from two to four dozen, a skillful operator, such as is here employed, will cut from fifty to sixty dozen per day, each of the different parts being cut at a single operation. A skillful workman will make up from fifteen to twenty dozen shirts per month, and receives for his services from \$40 to \$65. As not less than 200,000 dozen of these most necessary articles of a gentleman's wardrobe will barely supply the wants of this coast, giving employment to 5,000 operatives, it becomes a matter of no small interest, not only to dealers, but to all others looking to the future of the Pacific States, to foster all enterprises such as that in which Mr. Haas is now engaged.

**UTILIZATION OF THE SOAP ROOT.**—The fiber of the soap root, long looked upon as utterly worthless, is fast becoming a useful and important servant to our wants. Whether it has ever yet been trodden under foot or spit upon as a mat for our floors, as it should be, we know not; but it stands ready, as scrubbing brush, to wipe out every stain from the floor or its past reputation, or any foul aspersion cast upon either.

It climbs the loftiest flue as a chimney-sweep, and is welcomed alike in parlor or bedroom; as a lounge for luxurious ease in the one, or as a couch for inviting repose in the other. Of such consequence has it become in this respect, that a machine has been recently patented for curling the fiber and giving it the necessary elasticity to adapt it to the uses above described. As a material for a certain class of brushes, it is believed to be far superior to any American bristle, and fully equal to the best imported Russian. The San Francisco Brush Factory, No. 211 California street, although of very recent origin, is now manufacturing almost every different kind of brush to be found in the market, and receiving orders, as stated in their card, at lower prices than cost of Eastern manufacture—turning them out at the rate of 200 dozen per month—hoping not only to be able to fill all orders for home consumption, as fast as received, but soon to introduce a large quantity of goods of a certain class into the Eastern market. To this end no less than 100,000 pounds of the prepared fabric have been ordered from the interior, to be delivered at the factory the ensuing summer.

We understand, also, that Messrs. Feldman & Co. have the exclusive right here, for the patent rattan, street and stable broom, which is said to be much sought after by the miners for washing out their flumes, being stiffer and much more durable than those usually employed for that purpose,

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING, April 20, 1867.

## CITY STOCKS.

Transactions in San Francisco Gas stock have been quite large during the past week, selling at \$65@67 per share, then at \$65.50 @ \$66, closing yesterday at \$66.50. California Steam Navigation Company receded from 72½ to 68 ¾ cent.; closing yesterday at 72½. Spring Valley Water Company sold at \$67.50. Union Insurance Company sold at \$105 per share; National Insurance at \$74.

The receipts of the five San Francisco city railroad companies, as returned to the Internal Revenue Department, for the quarter ending March 31, were as follows. The returns are made in currency, the established rate being 74½ cents in January, 73½ cents in February, and 75 cents in March:

	January.	February.	March.
Omnibus.....	\$18,904	\$18,551	\$20,289
North Beach and Mission..	17,166	16,080	17,480
Central.....	10,607	9,933	11,023
Front-st., Mission and Ocean	4,863	4,565	5,500
Market.....	3,595	3,733	6,631
Totals.....	\$55,135	\$52,892	\$60,923

The aggregate sales in the Stock Board, during the month of March, were as follows:

March, 1864.....	\$2,975,795	March, 1865.....	\$5,239,034
March, 1866.....	5,623,900	March, 1867.....	4,034,239

## MINING SHARE MARKET.

The business of the Board during the week has been larger than any previous like period for months past. With scarce an exception stocks have been buoyant and at better prices. Many claims will show an increased yield this month, and their present condition is such as to inspire the belief that they are not likely to be less productive for some time to come. We understand that parties representing a large "short" interest in a certain stock have made overtures for a settlement, upon a basis of about \$2,400 per foot, which it is not likely will be accepted.

**HALE & NORCROSS**—continues to be firmly held in a few hands; during the week under review \$3,500 was bid. The managers of this mine keep carefully arranged tablos of the assays, workings and product of its ores, which are exceedingly valuable and instructive as illustrating the results obtained from similar ores worked in different mills, the varying proportions of gold contained in the bullion in different portions of the lode, and the large proportion of the bullion lost in working. From the tablo for the six months ending in February, 1867, we learn that during that period 15,639 tons of ore were reduced, the value of the bullion in which, according to assay, was \$1,288,132.79, but only \$816,977.62 was obtained, and \$471,155.17 was lost. In fourteen out of thirty-two workings during the six months, the gold exceeded the silver in the bullion to the amount of \$12,908.49, and in the other eighteen workings the silver exceeded the gold to the amount of \$35,570.13. In this, as in all the other mines on the Comstock lode, the deeper the development the smaller proportion of gold in the bullion. These very comprehensive tables of the assay value and actual yield of the ores are invaluable as demonstrating the varying per cent. obtained by different amalgamators. The ore was reduced at thirteen different mills, and the per cent. extracted was very much larger in some mills than that obtained from others. If all mine owners were to compile such tables, they would be able to tell where to send poor and where to send rich ores for reduction.

**SAVAGE**—rapidly advanced over our previous quotations; opening at \$2,600, improving to \$2,750, declining to \$2,600@2,675, and closing at \$2,590. During the week ending April 13th, this mine yielded 1,606 tons of ore, giving an assay value of \$70,775, or \$44.06 per ton, being \$3.60 per ton more than the yield of the previous week. This amount came from the following localities: Old upper works, 79 tons; sixth station, 260 tons; seventh station, 876 tons; Curtis shaft works, 391 tons. The Curtis shaft has been sunk twenty feet towards the fourth station during the week under review. The recent

storms have again materially retarded shipments of ore. The restraining order pending against this company for some time past was removed on the 13th instant.

**CROWN POINT**—declined from \$1,350 to \$1,180, rallied to \$1,260@1,340, and closed yesterday at \$1,400. In the east drift from the 500-foot level the recently discovered body of ore has been penetrated, and is said to be eight feet wide. It is reported that water has interfered with the further prosecution of work at this point since the 11th instant. During the week ending April 12th, 493 tons of ore were taken from the mine.

**YELLOW JACKET**—improved from \$1,190 to \$1,254, receded to \$1,195, then sold at \$1,235@1,250, and closed at \$1,240. We cannot enter into particulars concerning the condition of this mine for reasons frequently stated, viz.: remissness on the part of officials in Virginia City in sending information to the company's office in this city.

**GOULD & CURRY**—sold to a larger extent than usual, rising from \$400 to \$500@590, dropping to \$435, and closing yesterday at \$480. It is the intention of this company to resume work at an early day at the following points of their mine: in the south drift from the fifth station—towards the Savage ground—which is in fifty feet; in the fourth station drift south, running east; and from the fourth station north to explore the northern portion of the mine, the proposed drift to run north-east.

**CHOLLAR-POTOSI**—has been in marked favor since our last reference, opening at \$345, advancing to \$394, then selling at \$375, under a large sale improving to \$400, and closing at \$400. It is said that the Blue Wing station is producing the usual quantity of ore. The winze from the Santa Fé station is down forty-eight feet, and is reported to be in as good ore as is obtained in the level above. The first station of the new shaft is yielding about fifty tons of ore per day. The surveyor of this company, Richard H. Stotch, makes the following estimate of ore in the mine: Above the tunnel level, 5,000 tons; between tunnel level and Santa Fé station, 150 feet long by 110 feet deep and 35 feet wide, 48,000 tons—already extracted, 3,500 tons, and allowing 11,100 tons (25 per cent.) for waste, leaves 33,400 tons; below the Santa Fé, say 150 feet long, averaging 20 feet wide and 50 feet down, and supposing the bonanza to taper out in depth, 10,000 tons; first station (new shaft) stope, supposing stope to continue up four sets, 1,078 tons; and below the first station and above Peck drift, say 70 feet down, 10 wide, and 40 long, 2,500 tons, making a total of 51,978 tons. During the week ending April 13th, 1,686 tons of ore were sent to the custom mills; previous week, 1,481 tons.

**IMPERIAL**—has fluctuated but little, selling at \$265@270, and closing at \$277. The first clean-up of this company during the current month, produced about \$20,000 in bullion. They are now hauling from 120 to 140 tons of ore per day to the Rock Point mill. The Imperial-Empire shaft is now timbered 861 feet, with but little water at that depth.

**OPHIR**—sold to a considerable extent, rapidly advancing from \$290 to \$355, falling to \$290, then selling at \$320@345, and closing at \$346. The south drift on the tenth station is in 68 feet. The difficulty this company, as well as most others, had to contend with lately, was the limited supply of wood, but we understand that an adequate amount is now on hand.

**ALPHA**—sold at \$205@310.... **BELCHER** receded from \$190 to \$162.50, then sold at \$190, and closed at \$205.... **EMPIRE** varied little from \$170, closing at \$175.... **CONFIDENCE** sold at \$36@41, closing at \$36.50.... **GOLD HILL Q. M. & M. Co.**, recently placed on the list, sold at \$200@197.50 per share.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,525,752.

**THE RAILROAD CONSTRUCTOR.**—The Humboldt Register enters its protest against the claim made by some of the California journals, that this is a California invention; and declares that the honor belongs to Nevada in general, and Star City, Humboldt county, in particular, Mr. Robertson having been a resident of that place at the time the machine was projected. We are willing to divide the glory between the two States.

**LLOYD & STEWART'S ANCHOR—FAVORABLE TESTIMONY.**—S. C. Nathan, one of our San Francisco pilots, makes oath before a Notary that he has tried this anchor in such places and under such circumstances, as to be satisfied that it has no equal. He recommends masters and owners of vessels to adopt it.



## New Incorporations.

April 17th.—Cambridge Mining Company: Lode near Grass Valley. Capital stock \$250,000; divided into \$1,000 shares. Trustees: D. W. C. Rice, Wm. Blanning, W. H. V. Cronise, W. E. Dean, Milton Bulkley, and W. B. Cummings.

April 13th.—Potrero Company: To establish a manufactory for oils and other chemicals. Capital stock, \$40,000, in 800 shares of \$50. Trustees: M. Burkhardt, M. M. Estee, James L. Beyea, Henry K. Goddard, and A. D. Piper.

**THE QUICKSILVER MINING COMPANY.**—We have received a copy of the annual report of this company. The pamphlet contains the President's report to the stockholders, at the annual meeting in Philadelphia, February 27th, and also that of the superintendent of the mine (New Almaden) to the President. The condition of the company is stated to be better than at any previous period, notwithstanding the low price of quicksilver, due to increased production without a corresponding increase in demand. The total world's production for 1866, was, in round numbers, 85,000 flasks. Of this, 33,000 was from this mine.

**A YOUTH'S HISTORY OF CALIFORNIA.**—A. Roman & Co., the publishers of this work, have sent us a copy. It is a neat 12mo. of 187 pages. Heretofore, "Notes" of sometimes questionable authority, and "Annals" of formidable dimensions, have furnished the California school-boy with the only means of an acquaintance with the history of his own State. This little volume commends itself as giving the salient points in such history, in concise and attractive form; and its perusal would do no harm to many a San Franciscan of larger growth.

**AN INTERESTING MAP.**—We have seen a proof sheet of the map of Sierra county, now being prepared by Messrs. Crossman & Cochrane. Besides everything else which one would expect to find on such a map, it delineates the course of the ancient river channels, so far as they have been defined. Crossing as they do, the present river channels, these beds of aniferous cement and gravel are especially interesting to the miner and the geologist.

**ARTIFICIAL ICE.**—Mr. W. R. Frink has exhibited to us a sample of ice made by him from Spring Valley water. This ice was made by a machine manufactured in this city, under his direction, and the first work of the kind done on this coast. The machine weighs only about eighty pounds, and is capable of producing twelve pounds of ice at one heat—heating is the proper term to use, although freezing is the result. We shall give a more extended notice of the process and machine next week.

**UNITED STATES DEPUTY SURVEYOR FOR DISTRICT No. 9.**—Rudolph D. Henreus has been appointed U. S. Deputy Surveyor for the counties of Kern, Tulare, San Diego, Los Angeles and San Bernardino—constituting mineral district No. 9.

**PALMER'S PATENT ARTIFICIAL LEG** is said to be the best in the world. Jarvis Jewett is the agent, at 629 Washington street, San Francisco.

## MINING SHAREHOLDERS' DIRECTORY.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DELINQUENT.	DATE OF SALE.
Aberdeen, E. V. B. N. V., March 25, \$5.	Apr. 25—May 27	Apr. 25—May 27
Adams Pet. Oil Co., March 25, \$5.	Meeting, April 15	Meeting, April 15
Adella, Sierra Co., Cal., April 9, \$50.	May—May 27	May—May 27
Arizona Cons., Arizona Ter., Annual Meeting, May 8	Annual Meeting, May 8	Annual Meeting, May 8
Big Blue Lead, Kern Co., Cal., Feb. 19, \$5.	April 2—April 23	April 2—April 23
Belcher, Virginia, Nev., March 25, \$12.	Apr. 25—May 27	Apr. 25—May 27
Belcher M. Co., Vir., March 25, \$5.	Apr. 25—May 27	Apr. 25—May 27
Baldwin, Vir., Nev., March 25, \$5.	Apr. 25—May 27	Apr. 25—May 27
Butterfield, Chibabua, Mex., April 11, \$2.	May 16—June 3	May 16—June 3
Cosala, Sinaloa, Mex., Feb. 12, \$1.	April 18—May 7	April 18—May 7
Camargo, Sinaloa, Mex., Feb. 14, \$2.	Mar. 22—May 21	Mar. 22—May 21
Chilipienca, Sonora, Mex., March 25, \$5.	May 2—May 20	May 2—May 20
Cherokee Flat, Butte Co., April 10, \$5.	May 14—June 5	May 14—June 5
Crow Point, Nev., Dividend \$30.	Payable April 5	Payable April 5
Diamond Cop., Del Norte, Cal., Feb. 4, \$2.	March 23—April 15	March 23—April 15
Daniels, Lander Co., Nev., March 25, \$5.	May 2—May 27	May 2—May 27
Dardanelles, Del Norte Co., Cal., March 16, \$1.	May 4—June 1	May 4—June 1
Evoca Cons. Cop., Del Norte Co., Annual Meeting, May 23	Annual Meeting, May 23	Annual Meeting, May 23
Eureka Coal M., Alameda Co., Feb. 7, \$5.	April 8—April 30	April 8—April 30
El Dorado, Nevada, Nev., March 25, \$5.	Apr. 25—May 27	Apr. 25—May 27
Empire M. & M., Nev., dividend \$10.	Payable March 15	Payable March 15
El Tasto, Sonoma, Mex., Feb. 12, \$1.	April 13—May 1	April 13—May 1
Forest Springs, Grass Valley, Cal., Feb. 13, \$40.	Apr. 13—Apr. 30	Apr. 13—Apr. 30
Francisco-American, Lower California, A. J. Meeting April 16	Meeting April 16	Meeting April 16
Great Central, Yuma Co., A. T., Feb. 1, \$1.	April 8—April 30	April 8—April 30
Grass Valley, Nevada, Nev., March 25, \$5.	Apr. 25—May 27	Apr. 25—May 27
Golden Rule, Cal., div. \$100.	Payable Jan 5	Payable Jan 5
Gold Quarry, Placer Co., Feb. 21, \$20.	April 22—May 13	April 22—May 13
Geo. Washington, Alpine Co., April 5, \$5.	May 11—June 3	May 11—June 3
Gold Hill Quartz Co., Dividend, \$100.	Payable April 23	Payable April 23
Hope Gravel, Nev. Co., Cal., Annual Meeting April 23	Annual Meeting April 23	Annual Meeting April 23
Hope Gravel, Nev. Co., Cal., April 15, \$1.	May 2—June 11	May 2—June 11
Hanscom Cop. M., Del Norte Co., Feb. 4, \$10.	April 1—April 22	April 1—April 22
Hale & Norcross, Virginia, Nev., div. \$125.	Payable April 15	Payable April 15
Imperial, Virginia, Nev. div. \$15.	Payable April 15	Payable April 15
Julia, Storey Co., Nev., Feb. 14, \$1.	April 13—May 8	April 13—May 8
Keystone M., Calaveras Co., Feb. 20, \$10.	April 23—May 20	April 23—May 20
Kentuck, div. \$150.	Payable April 10	Payable April 10
Keley & S., El Dorado Co., Apr. 4, \$10.	May 2—May 27	May 2—May 27
Keystone M., Calaveras Co., Annual Meeting May 1	Annual Meeting May 1	Annual Meeting May 1
Lyon M. & Co., El Dorado Co., Apr. 3, \$2.	May 4—May 18	May 4—May 18
North Star, Lander Co., Nev., Feb. 14, \$5.	April 24—May 15	April 24—May 15
Nuestra Señora de Guadalupe, Feb. 15, \$1.	April 17—May 15	April 17—May 15
Yoselina M., Annual Meeting April 29	Annual Meeting April 29	Annual Meeting April 29
Orcutt, Storey Co., Nev., Feb. 12, \$10.	April 13—May 4	April 13—May 4
Patricio & Dolores, Mex., Feb. 1, \$3.	Mar. 5—Mar. 22	Mar. 5—Mar. 22
Rattlesnake, Yuba Co., March 22, \$1.	April 25—May 14	April 25—May 14
Roten Cruz, Santa Cruz Co., Mex. 9, \$50.	April 13—April 30	April 13—April 30
Sae Marcial, Sonora, Mex., Jan. 13, \$20.	Mar. 5—April 4	Mar. 5—April 4
Shoshone S. M., dividend, \$2 per share.	Payable March 14	Payable March 14
Savage Virginia, Nev., dividend \$100.	Payable March 8	Payable March 8
Smoky Valley, dividend.	Payable Feb 1	Payable Feb 1
Santiago, Silver City, dividend \$100.	Payable March 1	Payable March 1
Sierra, Douglas Co., Nev., March 22, \$250.	April 27—May 14	April 27—May 14
Sierra Nevada, Storey Co., Nev., Apr. 10, \$4.	May 14—May 30	May 14—May 30
Tellurium, Amador Co., Cal., Feb. 9, \$1.	April 13—April 20	April 13—April 20
Union Cop., Calaveras Co., Apr. 19, \$50.	May 20—June 10	May 20—June 10
Ventana, Durango, Mex., Feb. 4th, \$150.	April 6—April 21	April 6—April 21
Whitaker, Lander Co., Nev., Feb. 14, \$15.	Mar. 29—May 21	Mar. 29—May 21
Yellow Jacket, Gold Hill, div. \$50 sh.	Payable Jan 15	Payable Jan 15
Yoselina, Lander Co., Nev., April 11, \$500.	May 15—June 3	May 15—June 3

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	FRIDAY EVENING, APRIL 19, 1867.
MISCELLANEOUS STOCKS.	
United States 7 1/2-10ths Bonds, Jan. Issue.	54 1/2
Legal Tender Notes.	73 1/2
California State Bonds, 7s, 1857.	80
San Francisco Bonds, 1851.	100
San Francisco City Bonds, 1854.	80
San Francisco City and County Bonds, 6s, 1853.	74
San Francisco City and Co. Sch. 18 1/2s, 7s, 1856.	80
San Francisco City and Co. Sch. 18 1/2s, 7s, 1852.	80
San Francisco City and Co. Bonds, 7s, 1854.	80
San Francisco City and Co. Bonds, 7s, 1855.	80
San Francisco City and Co. Bonds, 7s, 1856.	80
San Francisco City and Co. Bonds, 7s, 1857.	80
San Francisco City and Co. Bonds, 7s, 1858.	80
San Francisco City and Co. Bonds, 7s, 1859.	80
San Francisco City and Co. Bonds, 7s, 1860.	80
San Francisco City and Co. Bonds, 7s, 1861.	80
San Francisco City and Co. Bonds, 7s, 1862.	80
San Francisco City and Co. Bonds, 7s, 1863.	80
San Francisco City and Co. Bonds, 7s, 1864.	80
San Francisco City and Co. Bonds, 7s, 1865.	80
San Francisco City and Co. Bonds, 7s, 1866.	80
San Francisco City and Co. Bonds, 7s, 1867.	80
San Francisco City and Co. Bonds, 7s, 1868.	80
San Francisco City and Co. Bonds, 7s, 1869.	80
San Francisco City and Co. Bonds, 7s, 1870.	80
San Francisco City and Co. Bonds, 7s, 1871.	80
San Francisco City and Co. Bonds, 7s, 1872.	80
San Francisco City and Co. Bonds, 7s, 1873.	80
San Francisco City and Co. Bonds, 7s, 1874.	80
San Francisco City and Co. Bonds, 7s, 1875.	80
San Francisco City and Co. Bonds, 7s, 1876.	80
San Francisco City and Co. Bonds, 7s, 1877.	80
San Francisco City and Co. Bonds, 7s, 1878.	80
San Francisco City and Co. Bonds, 7s, 1879.	80
San Francisco City and Co. Bonds, 7s, 1880.	80
San Francisco City and Co. Bonds, 7s, 1881.	80
San Francisco City and Co. Bonds, 7s, 1882.	80
San Francisco City and Co. Bonds, 7s, 1883.	80
San Francisco City and Co. Bonds, 7s, 1884.	80
San Francisco City and Co. Bonds, 7s, 1885.	80
San Francisco City and Co. Bonds, 7s, 1886.	80
San Francisco City and Co. Bonds, 7s, 1887.	80
San Francisco City and Co. Bonds, 7s, 1888.	80
San Francisco City and Co. Bonds, 7s, 1889.	80
San Francisco City and Co. Bonds, 7s, 1890.	80
San Francisco City and Co. Bonds, 7s, 1891.	80
San Francisco City and Co. Bonds, 7s, 1892.	80
San Francisco City and Co. Bonds, 7s, 1893.	80
San Francisco City and Co. Bonds, 7s, 1894.	80
San Francisco City and Co. Bonds, 7s, 1895.	80
San Francisco City and Co. Bonds, 7s, 1896.	80
San Francisco City and Co. Bonds, 7s, 1897.	80
San Francisco City and Co. Bonds, 7s, 1898.	80
San Francisco City and Co. Bonds, 7s, 1899.	80
San Francisco City and Co. Bonds, 7s, 1900.	80

## GAS COMPANIES.

San Francisco Gas Co.	65 1/2
Sacramento Gas Co.	60

## RAILROADS.

Sacramento Valley Railroad.	40
San Francisco and San Jose Railroad.	45
Omnibus Railroad.	54
Central Railroad.	40
North Beach and Mission Railroad.	49
Front Street, Mission and Ocean Railroad.	18

## BANKING INSTITUTIONS.

California Loan and Savings Society.	—
Bank of Pacific Accumulation Loan Society.	—
The Bank of California.	136

## INSURANCE COMPANIES.

Fireman's Fund Insurance Co.	98
Pacific Insurance Co.	125
San Francisco Insurance Co.	131
Home Mutual Insurance Co.	400
California Insurance Co.	1650
Union Insurance Co.	102 1/2
California Home Insurance Co.	—
Home Mutual Insurance Co.	—
Occidental Insurance Co.	90
National Insurance Co.	72

## MINING STOCKS—WASHER DISTRICT.

Alpha.	300
Baltimore American.	—
Belcher.	200
Bullion, G. H.	31
Crown Point.	1235
Confidence.	38
Chollar-Potosi.	397 1/2
Dancy.	9
Eschscholtz.	5
Empire Mill and Mining Co.	175
Gould & Curry.	490
Hale & Norcross.	340
Imperial.	275
Lady Bryan.	—
Ophir.	345
Reynolds.	23
Savako.	2550
Yellow Jacket.	1235
Golden Rule, California.	10

## San Francisco Market Rates.

## Wholesale Prices.

Flour, Extra, 48 lbs.	58 1/2
Do. Superfine.	58 1/2
Corn Meal, 48 lbs.	2 1/2
Wheat, 48 lbs.	1 1/2
Oats, 48 lbs.	1 1/2
Barley, 48 lbs.	80
Beans, 48 lbs.	2 1/2
Potatoes, 48 lbs.	1 1/2
Hay, 48 lbs.	8 1/2
Live Oak Wood, 48 lbs.	9 1/2
Beef, extra, dressed, 48 lbs.	9 1/2
Sheep, on foot, 48 lbs.	4 1/2
Hogs, on foot, 48 lbs.	10
Hogs, dressed, 48 lbs.	10 1/2

Sugar, crushed, 48 lbs.	13 1/2
Do. China.	9
Office, Costa Rica, 48 lbs.	21 1/2
Do. Rio.	21 1/2
Tea, Japan, 48 lbs.	60
Do. Green.	60
Hawaiian Rice, 48 lbs.	9
China Rice, 48 lbs.	64
Coal Oil, 48 lbs.	60
Candles, 48 lbs.	16
Ranch Butter, 48 lbs.	21
Butter, California, 48 lbs.	16
Cheese, California, 48 lbs.	12
Eggs, 48 lbs.	27
Ham and Bacon, 48 lbs.	13 1/2
Shoulders, 48 lbs.	12 1/2

## Retail Prices.

Butter, California, fresh, 48 lbs.	25
Do. pickled, 48 lbs.	35
Do. Oregon, 48 lbs.	15
Do. New York, 48 lbs.	35
Cheddar, 48 lbs.	15
Honey, 48 lbs.	15
Eggs, 48 lbs.	30
Lard, 48 lbs.	15
Ranch Butter, 48 lbs.	15
Cranberries, 48 lbs.	18
Potatoes, 48 lbs.	1 1/2
Potatoes, Sweet, 48 lbs.	3
Potatoes, 48 lbs.	3
Onions, 48 lbs.	3
Apples, No. 1, 48 lbs.	4
Pears, Table, 48 lbs.	4
Plums, dried, 48 lbs.	8
Peaches, dried, 48 lbs.	11
Oranges, 48 lbs.	59
Lemons, 48 lbs.	20
Chickens, 48 lbs.	75
Turkeys, 48 lbs.	75
Soap, Pale and C. O.	7
Soap, Castile, 48 lbs.	15

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Cor. of Washington and Sansome streets.

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This Patent secures the exclusive right to employ in Stone-Breaking Machines Up-right Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials is crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.

BLAKE & TYLER,

14v14t Agents for the Pacific Coast.

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## ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH this terrible and excruciating disease, that the means of a safe, speedy and permanent cure are within the reach of every sufferer, by using

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For Inflammatory, Chronic, Hereditary and Mercurial Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all the modifications of the disease, whether confined to one or more joints, or system or errant in their character. Composed wholly of VEGETABLE EXTRACTS, it exterminates the complaint without injuring the constitution. None but the PUREST SUBSTANCES have been selected for its preparation, and its use is attended with no danger, and no return to the pain and debility of the patient, and once cured, nothing but the grossest imprudence can lead to a relapse. The confidence with which these statements are made to the public, is the result of many years of observation and experience. The reputation of mere palliatives soon dies out, but that of a STERILIZING MEDICINE, which produces, year after year, in all cases, the same beneficial effects, NEVER DIES. This has been the history of Richards' Remedy. Try it!

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ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous Substances, capable of supplying Burning Fluids. By Thomas



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner* of April 6th: Two assays made of the decomposed substance struck in the Tarshish early this week, after careful averaging the samples, gave as follows: No. 1, weight of silver per ton, 513.2 ozs., value \$667.16; weight of gold per ton, 3.5 ozs., value \$72.34; total value per ton, 739.50. No. 2, weight of silver per ton, 463.3 ozs., value \$597.87; gold 3.4 ozs., value \$70.27; total value per ton, \$668.14. The vein is at least three ft., and not yet pierced through. Twenty-five sacks, weighing over a ton, of ore equally good with the above samples, was taken out of a hole not one-fourth the size of the tunnel. Five tons will be taken to Washoe for reduction as soon as the state of the roads will permit. The work of extraction will meanwhile go on.

All the ground for a mile each way on the Tarshish, not previously claimed, has been located. The croppings are easily distinguished from any other. This strike will give a new impetus to operations here.

The American is preparing for work.

From the *Silver Mountain Bulletin* of April 6th: In the Mountain tunnel, 22 ft. has been made in the two weeks preceding March 30th, and the favorable appearance of the rock gives promise of 14 ft. per week in future. Nitro-glycerine will be used as soon as it can be obtained.

## Amador County.

It is stated, and we have no good reason to doubt the statement, that the suspension of Meader & Co. is only temporary. The Newton and Pioneer mines have not ceased operations in consequence of the reported failure; the hands have been paid in part, and are content to trust the company further.

## Butte County.

From the *Oroville Record* of April 13th: The ground upon which Bidwell's Bar, the well known '49 camp stood, is to be mined out.

The extensive beds, or rather mountains of cement in this county, and which, with the imperfect methods of saving the gold, have heretofore proven remunerative, must soon become more valuable than ever, if worked by the chlorination process. Preparations are being made to test them, at various points, and we hope soon to hear of successful results.

The Marysville *Appeal* has seen rich samples of blue cement gravel from the Bangor blue gravel range. Shafts were commenced on this range years ago and abandoned. Some months ago the work of prospecting was renewed. Two shafts are now down 60 ft., two more going down, and the range located for three miles.

## El Dorado County.

From the *Placerville Democrat* of April 13th: The claim of Mr. Shepherd, at Poverty Point, within a mile of this city, is one of the richest in the State. A few weeks ago, in about 20 minutes, he took out specimens valued at \$1,100. On Monday last he brought to our office a number of rich specimens, taken out the same day, from the same claim, varying from two to six inches in length, literally covered with gold.

## Inyo County.

The Gold Hill *News* has seen Mr. Marshall, just from Kearsarge. He states that the country is the roughest of the whole Sierra range. The ore from the best mines will work in the mills from \$200 to \$900 per ton. The ground is covered with float rock, some of which he had worked and realized over \$500 per ton, or in that proportion.

From the *Visalia Delta* of April 10th: We learn from Capt. A. B. Paul that several heavy companies will be operating in this district during the coming summer.

Rock from the Kearsarge mines, worked by furnace, pays \$720 per ton. Silver Sprout Co. sold their mines to a San Francisco Co. for a large sum of money. The mines on Lone Pine, worked chiefly by Mexicans with small furnaces, are turning out a great deal of bullion. There are many arastras and small mills running there.

## Mariposa County.

From the *Gazette* of April 13th: Letter from Coulterville: H. H. Sheldon has taken charge of the French Co's mine and mill for a San Francisco Co., and has commenced work in earnest. \* \* L. Cunningham and N. G. Hideley have started their new mill of four stamps on their tale vein on Black Hill. All appearances would indicate that they will do well. A. G. Black's mill on Bull Creek, is now running on rock from a vein of recent discovery. The vein is very large and the ore good.

## Nevada County.

From the *Transcript* of April 11th: Some excellent rock is being obtained from the Oriental mine, on Deer Creek.

Same of 16th: We were shown yesterday a rich specimen of quartz from the Birchville ledge, near Eureka. It was thickly covered with particles of free gold. A mortar test of this rock paid at the rate of \$500 per ton.

Same of 17th: At Flat Creek, the tunnel of Dillon, Stiles & Co. is in 175 ft., and McGuire & Co. have run 300 ft. since last fall. The former company expect to strike the channel before summer, and the latter company will suspend work for the purpose of working in the hydraulic claims until the water becomes scarce.

From the *Gazette* of April 13th: Fifty-eight tons of rock from the Noramhagua mine, crushed this week, yielded \$5,100—an average of \$88 a ton.

Same of 16th: The Badger Co., on Manzanita Hill, is in bad luck. Three weeks ago the bank at the mouth of their tunnel caved in, stopping it up and backing up the water, which breaking through, swept everything into the river, damaging the company to the amount of \$3,000. They had hardly repaired the damage, when their flume was blown down, delaying their work, and putting them to further expense.

From the *Grass Valley National*: The Phoenix mine, owned by Messrs. Hennessy, Galloway and others, at the present depth, 50 ft., looks well. The Phoenix was worked years ago to a depth of 35 ft., at which point quartz was taken out which yielded \$25 to a ton.

From the *Grass Valley Union* of April 14th: The York Hill Co. will commence crushing at the Rocky Bar mill on Monday next. The third level is now being opened, and the mine will soon be in such a condition that 500 loads of rock can be taken out monthly.

## Plumas County.

From the *National* of April 6th: We learn that the new mill of Messrs. Light & Bro., at Genesee Valley, has been raised, and that the machinery will be put in as fast as possible. They have plenty of quartz ready for crushing as soon as the mill is completed.

Operations have been stopped at the old Round Valley mill, and the new one will be put in running order in about six weeks.

The mines upon the East Branch, at Twelve-Mile Bar, Rich Gulch, and Rush Creek Flat, are reported to be paying well. Messrs. Hyde & Ward have obtained as high as fifty dollars to the pan.

From the *Quincy Union* of same date: Hallsted & Co., near Twelve-Mile Bar, took out \$500 from their claims for two weeks panning. Hyde & Ward have commenced work near Twelve-Mile Bar, in what is known as "The Slide." They struck the Ohio Point lead, and have taken out as high as \$50 to the pan. Their old claim, opposite the bar, which paid them \$8 per day to the hand, is lying idle. On Rich Gulch, the miners are busily at work, with good prospects. A short time since C. Hallsted struck a quartz lead on Ohio Point, which prospects well. Messrs. Smith & Co., and Lew Sanders have struck rich diggings in Tadpole Ravine, near the head of Soda Creek, and are taking out big pay.

Bachellor & Co. are taking out rock from the Caledonia ledge, at Cherokee, which is paying \$18 per ton. Blood's mill, near Greenville, is said to be paying better than any of the mills in that vicinity.

The report that the Cosmopolitan Company had struck the main ledge was premature. The Company's tunnel is 375 feet in length. They are now working in comparatively soft rock.

## Placer County.

From the *Herald* of April 13th: The Daventport Co. have now got their shaft down 100 ft., and in a few days will drift for the ledge.

Mr. Lowry has recently struck it very rich in the Green Emigrant claim. As high as \$150 to the pan has been washed out after the quartz was pounded in a mortar.

On the Black ledge, south of the Green Emigrant, parties are now at work and are getting very rich prospects.

The Golden Rule Co., near Horse Shoe Bar, have decided to erect a 20-stamp mill. They have been hauling their rock three miles to Stewart's Flat mill for a year, and have thoroughly tested it.

From the *Stars and Stripes* of April 3d: The following Gold Run items are from a correspondent: O. Harkness' claim has yielded this season, for 73 days' run, \$11,850. Wolcott & Prindle cleaned up last week, and found \$2,564.47. Messrs. Stewart & Prindle, after a run of 15½ days, cleaned up \$1,047. The Uncle Abe Co's claim, owned by Messrs. Upton & Platt, and opened this spring, have made two runs—the first paying \$80 per day, and the second, after 16 days' washing

with 275 inches of water and three men, \$1,600. The Gold Run claim, owned by Messrs. Kinder & Stewart, cleaned up \$1,800 after 13 days' run. Messrs. Brogan, Johnson & Wentworth made a partial clean-up after a run of 20 days, and found \$2,500 in their boxes. Messrs. Hnyck & Judd have made a partial clean-up, which gave them \$2,000. Messrs. J. B. Taylor & Co. cleaned up, after a run of 20 days with 275 inches of water, and got \$4,569.

Colfax letter to Dutch Flat *Enquirer* of April 17th gives these items: John Frazier, near Kilmer's, has worked steadily during the rain, and has averaged over \$30 per day. Jess. Douglass has also been doing well, making from \$6 to \$10. Walker & Co. are now sluicing up the ground they have heretofore ground-slucied, and are making \$20 to the man, working six men.

## Shasta County.

From the *Courier* of April 13th: The South Fork mines continue to attract more and more attention. Two towns, Ellsworth and Lewiston, have been laid out. Work is being prosecuted on the Chicago, Crystal, Pacific and Ohio, and operations will be commenced on three or four other lodes next week. A number of Red Bluff people talk of going there as soon as spring opens.

Jollie & Dosh have leased Kelley & Co's mill, and are making a run on rock from the ledge at Muletown. The rock assays well, but is difficult to work.

Mr. Banghart, on Mad Mule Creek, while drifting on his vein last week, struck a very rich pocket. We were shown some specimens last Saturday, one of which weighed 5½ ozs., containing at least three ozs. of pure gold.

Larkin & Harris are opening what is supposed to be one of the richest claims ever worked on Roaring River. The ground is extensive enough to last for years.

The Red Bluff *Sentinel* says of the Clear Creek mines: Recent assays from the most reliable offices at San Francisco, prove, beyond doubt, that the ore is exceedingly rich, yielding as high as \$937 to the ton. Our town is nearly depopulated by the exodus of its citizens thitherward. Already several rich claims have been sold at high figures, although there is plenty of ground yet unoccupied.

We learn that five tons of Clear Creek ore has been shipped to Europe for reduction.

## Sierra County.

From the *Messenger* of April 13th: Near Kanaka City, South Fork of Kanaka Creek, John Fessler has discovered a ledge of talcose blende rock, containing a large proportion of gold, from which several thousand dollars have already been taken.

Hell Roaring, or Exchange Mining Co. at Minnesota, is reported to be paying largely of late. A piece of gold weighing about 40 ozs. was lately taken out.

The Fremont Co., at Wet Ravine, have commenced breasting. They have very flattering prospects. The Packer Co., at Smith's Flat, are taking out \$5 per day to the hand. The Oak Flat Quartz Co. are taking out richer ore than ever before.

Howland Flat letter to same says: The Monumental Co., which have lately struck into gravel, is getting most excellent prospects. To supply air they are now raising a shaft to the surface.

The Hawkeye Co. are getting very good pay in a very peculiar kind of dirt that lies high up on the outer rim of the channel.

The Pittsburg are running their tunnel for the back channel with good indications.

From the Union, Down East, Shirley, Mountaineer, French and Lone Star Co's, I hear good reports.

Work in the Union mine has been much retarded this winter by scarcity of water for hoisting purposes.

The *Advocate* of April 13th says: A company of Frenchmen found a nugget, last Monday, weighing a little over 22 ozs., in their claims just below the Cascades saw-mill, on the Middle Fork.

A letter to the *Alta* from Howland Flat gives these items: All the "Flat" claims are exhausted, except the Mountaineer, Shirley and St. Louis. Of the "Hill" claims, the present annual aggregate yield of the Pittsburg, Hawkeye, Down East and Union, is about \$350,000. The mines of Howland Flat are all tunnel mines, and are usually worked day and night. Water is plentiful the year round, this class of mining requiring but little water. The gravel is simply washed in ordinary sluices from 600 to 1,200 ft. in length, no mills being used, although considerable cement is sometimes encountered, but hardly in sufficient quantity to justify the expense of stamping or crushing it.

## Tuolumne County.

From the *Columbia Citizen* of April 13th: Rowell, Whiting & Co's claim at Sawmill Flat, yielded an ounce per day to the share at the last clean up this week.

John Adair, who has been visiting the Tuolumne county mines, says of the Raw Hide claim, that the shaft is 240 feet in depth, showing a vein eleven feet in width, and increasing in richness with the depth. App & Co's vein is twelve feet wide at the depth of 250 feet.

## Yuba County.

The Bateman ledge, at Dobbins' Ranch, is 20 inches thick on an average, and prospects well. The Grass Valley *National* learns that from a crushing of 53 tons, made at the Templar mill No. 2, at Indiana Ranch, \$25 per ton was realized. About 500 tons of pay rock is now in sight. The company own 1,600 ft. An eight-stamp mill is to be working within 60 days, on the rock taken from the ledge.

## ARIZONA.

A letter to the *Alta* from Aubrey City, March 25th, gives these items: Mr. Thompson brought down samples of ore from the Great Central mine, which has been found to yield 74 per cent. copper. It is said to be the richest ore ever discovered here. The men in the Great Central broke down over 100 tons of ore last week in three days, which will average 30 per cent. The company will have their new furnace running within the next 10 days, if the weather permits. They will also ship a lot of the high grade ores in bulk as soon as the Fork subsides, so that the teams can haul it down to the river.

## BRITISH COLUMBIA.

A letter to the *Walla Walla Statesman*, from Colville, March 14th, says: We have just received news from the newly discovered gold fields '49, about 20 miles from the mouth of the Kootenai, which is highly favorable. The discovery party, H. H. Oliver & Co., have commenced work, although greatly hindered by the cold, and are taking out good wages. Messrs. Dupee & Co., who have located claims above and below the Discovery, have prospected their ground, and have taken out as much as two ozs. of gold to the panful of gravel. The creek is about 20 miles long, and quite shallow; the bedrock can be reached at from six to 12 ft. Besides '49, there were two more creeks discovered last fall, a short distance from that place, and from prospects they seem fully as good as the '49. There is a report current that the steamer *Forty-nine* will leave the Little Dalles about the middle of April or first of May, for the above mines and the Big Bend country."

## COLORADO.

From the *Times* of March 26th: Last week, Mr. Mitchell, of the Alps Co., took out 102 ozs. with his 12-stamper. The Black Hawk Co's run was 240 ozs. The Smith & Parmelee mill was running only a short time, and cleaned up 60 ozs.

The Montanamil, in Spring Gulch, started up to-day.

This morning we were shown a chunk of rock from the Georgetown silver ledges, which, after being heated in a stove, showed pearly globules of silver all over it.

From two cords of quartz rock, taken (at a depth of 140 ft.) out of claim No. 1, east on the Gunnell lode, Eureka Dist., Mr. John Mendel saved 32 ozs., 2 pwt., equal to \$674. This was done in his 12-stamp mill.

The Gunnell yielded 138 ozs. this week, less than it would have done on account of repairs, etc.... The Briggs yielded 162 ozs.

From the *Denver News* of March 27th: On the Missouri lode at Jamestown, a shaft is down 22 ft., with four-ft. crevice. Judge Dickerson's quartz mill will soon be ready to start.

From the *Register*: From all quarters the most encouraging intelligence reaches us of active and extensive mining operations to be inaugurated this spring and summer. Old and long idle mills are to be repaired and put in running order. Others are to be built in various quarters. Smelting works and desulphurizers on approved plans are to be put up in our own and Clear Creek counties.

Work on the Canandaigua lode has progressed all winter, and is now down 80 ft., with excellent prospects.

## IDAHO.

From the *World* of March 30th: The prospect for a good mining season is favorable. On the west side of Elk Creek, on the bar, and along Slaughter House Gulch, there are a number of miners constantly employed, all making from good to first-rate wages, and as soon as the ditches can be safely started, a great amount of work will be commenced upon.

Good reports come from the Elk Horn Quartz mine. In piercing the lower tunnel the ledge has been struck at a depth of 400 ft. It is very rich, and averages about 2½ ft. in width. The company have already taken out over 600 tons of rich ore from the upper tunnel, and will soon commence crushing.



From the *Lewiston Journal* of March 22d: Florence, Warren's, and Elk City will be largely worked this season. At the latter place one or two mills will be built. Oro Fino will employ about 1,000 Chinese. The Palouse mines and Gnat Creek mines will employ some 200 or 300 men at fair wages during the early part of the season.

Kootenai will also produce considerable gold which will drift in this direction. So with Blackfoot and Lemhi.

Altogether, the prospects are more favorable than at any time before since 1862, when Florence was in its glory.

Mr. Hunt, express messenger, reports the snow seven ft. deep in Warren's Basin, and the miners impatient for spring. Provisions were abundant. The cold has interrupted to some extent the work on the ditches and flumes along Salmon river, although the work is progressing. Mining for the two weeks past on the river has been somewhat checked by the cold, though never entirely suspended. The work on the Little & Harpster tunnel is suspended, owing to some misunderstanding between the contractors and superintendent.

Express from Oro Fino says most of the miners have abandoned the town site and now occupy Pierce City.

The *Alt* has a letter from Silver City, Idaho, dated March 25th, with these items: Capt. Pierce, with 16 men, left the other day for the head waters of the Owyhee River, on a prospecting trip to the Red Mountains, 100 miles south of this place.

All the placer claims of Jordan Creek have passed into Chinese hands.

Only the Fagus, of the 12 quartz mills in this county, is now running.

From the *Oregon Herald* of April 6th: Mr. Richard Brady, of Placerville, has just returned from Lemhi, where he spent the fall and winter. He reports 12 to 15 mining camps as having been struck around Fort Lemhi. In all of them "wages prospects" could be found, but nothing of larger promise. The diggings are extensive, and the gold is diffused through the earth from within a foot of the surface to the bedrock, which is from 8 to 26 ft. deep. Water is readily attainable. The distance to the mines from Boise City is about 350 to 400 miles. The roads in that direction are good. One-half of the population of the Boise Basin are talking of putting out for Lemhi as soon as spring fairly opens.

#### OREGON.

From the *Oregonian*: We have a letter from Auburn which states that the new mines, 70 miles south of that place, are very extensive. Prospectors have struck a creek at a place where immigrants crossed it at an early day, and find considerable quantities of gold. One man took out \$600 in 13 days. It may be that this is one of the places where the immigrants, who came by "Meek's cut-off," discovered the gold of which everybody has heard so often.

Elk Creek Dist., in the John Day country, is one of the richest quartz mining localities in Oregon. Some of the rock from that district shows \$270 per ton of gold.

The *Umatilla Press* says that the Lawrence Bros. have discovered a silver lode on their ranch on Butter Creek, in this county. Ore therefrom has been sent to Portland for assay.

The *Jacksonville Sentinel* says the tunneling in Gold Hill is still progressing, with good prospects of success. The ledge has been struck again, and the miners are running a shaft from the tunnel to the surface—a distance of 120 ft.

#### MONTANA.

From the *Post* of March 30th: Hendry's mill cleaned up on last Saturday, from an eight day's run on Whitlatch Union ore, with 18 stamps, 324 ozs. of retort, valued at \$5,832.

Prof. Charles Rumley assayed some ore from the Copperopolis lode, Muscleshell Dist., which yielded 41½ per cent. pure copper.

Mr. Pfel has organized a company in St. Joseph, Mo., with a capital of \$100,000 to put a mill on the Alameda lode. Mr. Isaacs, agent for a New York company, has also purchased two mills, one for the Summit Dist. and another to work on the Alameda.

The St. Louis and Montana smelting works yesterday cupelled the largest silver brick which has yet been produced. It is circular in form, 28 in. in diameter, 1½ in. thick, and weighs 120 lbs. This splendid piece of silver is the product of 7½ tons of ore from the Legal Tender lode. Notwithstanding the many adverse circumstances against which he had to contend, such as poor coal, the extreme cold, etc., Mr. Philip Deidesheimer has so altered and improved the works that they may now be pronounced a complete success.

Letter to same from Atlantic City, Lost Horse Gulch, says: That new camp—Eagle Gulch—is prospecting even better than at

first reported. Several parties from this gulch have gone there and are taking out pay dirt, and getting ready for sluicing as soon as water can be obtained.

Letter from Highland Dist.: The thermometer was 40° below zero, on the morning of the 12th. Mining operations were resumed on the 18th. Yesterday, Myers and Longloy discovered a ledge that bids fair to eclipse anything in this section. George Searl is making arrangements to develop the Reward ledge. Butter and others are sinking a shaft on the Mount Ceniz, a new discovery. The Golconda have their tunnel in 132 ft.

Letter from Blackfoot: Thermometer 34° below zero on the 13th. As soon as the weather will permit, work will be commenced in earnest, and the bar below town will be swarming with men. Washington, Lincoln, Jefferson, McClellan, California and Nevada companies are putting up hydraulic works on bars in the foothills.

Letter from Summit: The Boardman tunnel is in 213 ft., and will tap the Kearsarge 225 ft. below the surface. The Keystone has a shaft 60 ft., and ore from it has paid \$40 per ton. The Excelsior resumed operations on the John How lode to-day, by starting a tunnel. It will be six and a half feet high by six feet wide, and 400 ft. in length; it will tap the lode 300 ft. below the surface. Duncan and Connyman have purchased 800 ft. on the Nelson. The shaft is now 70 ft. The Christnought Co. are working at a depth of 80 ft. in discovery and 50 ft. in No. 2. The ore is very rich, paying \$100 per ton. The new mill will cost \$150,000. The total yield of seven runs on Kearsarge ore, at the Hawkeye mill, between Jan. 7th and March 17th, was \$23,016.64, and crushed 771 tons. Twenty-eight hundred pounds of rock from the Black lode, in Brown's gulch, cleaned up \$24.

Helena items: The Turnley 10-stamp mill in Grizzly Gulch, cleaned up 266 ounces (\$4,788) of amalgam, last week, with some more to come down. The mill was crushing Whitlatch Union ore, and the above was the result of one week's run.

A 20-stamp mill is to be located at the head of Ten Mile Creek, ten miles from Helena. Besides the stamps, it will have Moore crushers, Varney pans, and amalgamating tubs.

#### NEVADA.

##### Esmeralda.

From the *Aurora Union* of April 6th: Over three tons of bullion from the Cornucopia mine, Partwick, are lying in Wells, Fargo & Co's office, in this place, waiting for shipment. Over 150 lbs. of bullion from the Diana has been shipped within the past week and plenty more at the mine waiting transportation; also \$3,500 worth of bullion has been shipped from Aurora in the meantime.

##### Humboldt.

From the *Register* of April 6th: M. Torrey is progressing finely with his mining operations. He has one large furnace, superior to anything of the kind in the State, nearly completed, and is getting everything else in good shape. His mines in Arabia are turning out to be all he could hope. He has ore now piled up on his dumps of the value of \$80,000 at the lowest estimate. Yesterday he commenced hauling this ore to his reduction works.

##### Reese River.

From the *Reveille* of April 6th: Yesterday there were brought into town from the Knickerbocker mill, near Ione, 1,156 ozs. of bullion.

In the Reville Dist. prospects are reported flattering. Several owners of mines are engaged in getting out ore for the Rutland mill. The Crescent, Mediterranean and Atlantic, of the Reville company, are yielding abundantly of ore that would work from \$100 to \$150 per ton.

Same of 8th: The Hopkins tunnel, which is to the rich belt through Lander Hill what the Suto tunnel is to the Comstock lode, is now in nearly 400 ft. It is the property of the Revenue Extension Co.

As wonderful as is the general character of the ore yielded by the Highbridge, it appears to improve and increase in richness as depth is attained. We were shown this morning a very beautiful specimen of mineral from the shaft of the Combination Co., at the depth of 170 ft. The piece is purplish black, and of remarkable gravity, and masses of it have returned \$10,000 of silver per ton. As rich as the mineral is, it is the predominant one in the Silver Bend and the Empire districts.

Same of 9th: Eleven bars of bullion were brought into town to-day from the mill of the Twin River Co. Yesterday, 2,713 ozs. of crude bullion came in from the mill of the Social and Steptoe Co. at Egan Cañon.

The Keystone mill, which commenced running on Feb. 5th, continued without interruption for 50 days, during which time it reduced 543 tons of ore, yielding on an

average \$262 per ton. The ore was in some 50 different lots.

The Manhattan shipped 56 bars on the 9th inst., valued at \$56,613. They were the product of 319 tons of North Star ore.

Same of 10th: In Newark Dist., 85 miles east of Austin, work is progressing on the mill of the Centenary Co. The Chihuahua, one of the mines belonging to the Co. has a 10-ft. vein on the top. A tunnel is now in 60 ft. Two hundred tons of ore now lying in the dump is estimated to be worth \$200 per ton.

The California mill is at work again.

Same of 11th: The Knickerbocker mill, near Ione, is working custom ore. The upper tunnel in the Great Eastern is progressing.

Same of 12th: The Gilligan vein, of the Social and Steptoe Co., in Egan Cañon, bids fair to be a splendid mine. We are informed that in the level from which ore is being extracted, the vein is 5½ feet, and two men in the day shift are able to supply the five-stamp mill with its full complement of ore.

Four bars of bullion came in last night from the Belmont Co's mill.

From the *Silver Bend Reporter* of April 6th: J. W. Gashwiler, M. J. McDonald and S. M. Buck, last week, purchased the entire mining interests of Col. D. E. Buel, in the Highbridge, Transylvania and El Dorado ledges. The new company will be called the Belmont Co. They will at once erect furnaces and other improvements, and preparations will be made for working upon an extensive scale.

The Kentucky, 90 miles S. W. from Belmont, is the representative mine of Palmetto Dist., as is the Highbridge of Philadelphia Dist. It is 1,600 ft. in length, and is owned principally by W. H. Bunyard. A perpendicular shaft recently sunk strikes the vein at the depth of 61 ft. The rock is rich—the entire mass, nine ft. thick, is estimated to be worth \$100 per ton.

Thos. Cahill, a day or two since, assayed a piece of the ore lately struck in the Combination company's claim upon the Highbridge, and it produced at the rate of \$10,247.79 per ton. The body of ore from which this piece was taken is about 13 ft. thick, and it is the opinion of Mr. Cahill that a considerable portion of it will work at the mill near \$5,000 per ton. A 40-stamp mill is to be erected at once.

The Rutland mill is 60 miles southeast of Belmont. It has five stamps of 600 lbs., and three of Wheeler's improved pans. It was to be set in motion on the 10th inst. Roasting furnaces are to be erected as soon as the weather becomes settled; meanwhile the wet crushing will be tried. The ore now on hand is from the Mediterranean, Crescent and Atlantic, and is estimated at an average of \$100 per ton. Some good ore has also been taken from the Mohaska ledge.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of April 8th: Everything in the cañon below Gold Hill is lively. All the mills are pounding away on full supplies of ore. At this time, the price of reducing ore to within a certain per cent. of the assay is \$15 per ton.

Same of 9th: The new shaft of the Imperial and Empire companies, being worked conjointly, is now 850 ft. deep. New and substantial hoisting works of the most powerful description will be erected, the grading for which will commence in a day or two.

The amount for which Col. Buel's property changed hands, is variously estimated at from \$160,000 to \$300,000 in gold coin.

A body of very rich ore, five feet thick, was struck on Saturday last at the 500-ft. level of the Crown Point mine, in the front ledge. Considerable excitement was created by this new development, which promises to be an extensive one.

The Bowers and Plato has stopped hoisting ore for a few days, to put in a new reel, and make other improvements. When the works again start they will be able to hoist about 150 tons of ore every 24 hours.

From same of 12th: The new and powerful hoisting works of the Empire and Imperial will be in running order by Aug. 1st. The eight-inch pump, running at the rate of eight strokes or revolutions per minute, is only able to keep the body of water recently struck in the Crown Point mine at a stand-still, and prevent its rising to the 500-ft. level, where the late rich strike of ore was made.

Same of 13th: The following is a statement of the amount of bullion shipped during the past week: From the office of Wells, Fargo & Co., in this city, there were shipped 4,347 lbs. of assayed bullion, valued at \$174,872.87; from their office in Gold Hill, 2,539 lbs., valued at \$69,761.61.

From the *Trepass* of April 9th: The ledge

in the Crown Point mine, where the rich strike was made, is five ft. wide. A miner, who was working in the drift when the ledge was cut, rushed to a broker's office as soon as he could get out of the mine, and bought one foot of ground at \$800. Yesterday the stock went up to \$1,400.

The Savage company will supply, besides their own mill, the New York mill with ore during the coming months, and the Hale & Norcross will furnish ore to the Manhattan mill.

Same of 10th: The Comet mill is now at work on Challenge ore.

Same of 11th: The new machinery of the Empire and Imperial, now on the ground, is as follows: Two double reversing engines, each of 80-horse power capacity, the steam to run the same to be generated from six boilers, each 50 inches in diameter, containing 50 three-inch tubes. The drainage engine is of 300-horse power, direct connection style, 42 inches diameter of cylinder, and 11-ft. stroke of piston-rod. The hoiler is 30 ft. in length, and contains 180 three-inch tubes.

Same of 12th—letter from Silver Bend: The Transylvania No. 1, parallel with the Highbridge, has been opened by inclines at four different points, and shows the same mineral in all, improving with depth. Ore from the surface pays by mill process \$300 per ton. Four tons from the Arizona paid \$900 in an anstra, worked by Martin & Borquers. The West Port, eight miles west of the Highbridge, assays \$3,000 per ton. The Phantom, \$1,800 per ton. The Silver Cord, \$2,100.

Same of 13th: In the Ophir, the drifts at the 8th and 10th levels are being pushed forward, and the indications are more favorable than for some time past. In the Gould & Curry, prospecting is being done at the Bonner shaft, and the mill will commence work on foreign ore. From the Savage, over 300 tons of ore are being shipped each day, and the profits of the mine this month will be larger than for some time. Coblar-Potosi is said to look well, and 300 tons of ore are being raised daily, supplying nine mills with ore. During this month at least 8,000 tons of ore will be mined. In the Belcher, prospecting goes on steadily. In the Yellow Jacket, a drift west of the 500 ft. level has cut a streak of rich ore. About 200 tons are shipped daily. In the Overman but little work is being done, except to keep the mine free from water.

From the *Gold Hill News* of April 8th: As soon as the ledge is tapped in the Imperial mine we may look for active operations in all mines from the Bullion to the Yellow Jacket. As the great quantity of water with which they have to contend is what has caused them all to suspend operations in the lower levels, within the next four months there will be more known of the permanency of the Comstock ledge than has ever before been developed.

Same of 9th: The Cressus is preparing for a further development of its claim.

We paid a visit to the Crown Point yesterday. We saw a small pile of ore from the 500-ft. level, not the smallest piece of which but showed black sulphuret of silver; and in many specimens native silver was to be seen. Stock in all the claims in Lower Gold Hill has gone up in consequence of the strike.

Same of 10th: We saw this morning a small bar from Mount Blanc ore worked at Rigby's mill. The bar contained \$41.86—divided as follows: Gold, \$14.94; silver, \$26.92. The silver is .951 fine.

#### WASHINGTON.

The *Lewiston Journal* of March 22d says: We learn by a party just from the Sound, that new discoveries of rich silver quartz were made a few days since on the Skagit river, nearly opposite Port Townsend. The specimens show an abundance of free silver. The party who made the discovery is not anxious to have the facts known, but the news has leaked out, and caused quite a sensation in the towns on the Sound, and parties are daily leaving for the mines.

PURE AIR FOR MINES.—We understand that the first plunger air machine, where the air is first compressed on cold spring water, before entering the lungs, was erected at the Ophir mine, on the Comstock lode—greatly to the health of the miner and profit of the company—by Capt. Wm. Williams, a practical mining engineer, now of this city, whose card appears in another column. This machine forced into the mine 48,324 cubic feet of air to a six-foot stroke, and is so simple in construction as to require only one-half the power of one man to operate it.



## Mining and Scientific Press.

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OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions or other favors extended to him, will be duly acknowledged at this office.

SAN FRANCISCO, Jan 11th, 1866.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Dec. 1, 1866.

Mr. E. L. Smith, is a duly authorized Agent for this paper, February 25, 1867.

Mr. Geo. F. Felt is a duly authorized agent for the Mining and Scientific Press, March 23, 1867.

Mr. J. M. Quay will act as agent for the Mining and Scientific Press from this date, March 23, 1867.

## San Francisco:

Saturday Morning, April 20, 1867.

HAS DONE SOME GOOD ALREADY.—It is said that seven companies have been organized in Elmira, New York, for mining purposes and investment in California. Two gentlemen from that place arrived in this city by the last steamer, who intend to purchase mining property. Similar companies are being formed in other towns. This sudden eye-opening is represented to be due to the report of J. Ross Browne, and with good reason. That preliminary report may be said to be the first paper by means of which the general public have been furnished with information on the subject of our mineral resources in any manner bearing the endorsement of the Government. Necessarily and admittedly imperfect, it is notable as the first of a series which we hope will result in immense benefit to our State. The fact, so often noted by letter-writers, that our California journals are rarely to be found upon the hotel tables in the Atlantic cities, accounts for the ignorance which has there prevailed in regard to us; and it was high time for Government to move in the matter.

THE AUZERAI'S HOUSE, at San José, is the most elegant hotel on the Pacific coast, outside of San Francisco, and receives frequent favorable mention from the citizens of Santa Clara county and its numerous patrons. It contains one hundred and five rooms, all possessing good light and ventilation. The suits embrace large rooms, superbly furnished, commanding fine views of valley and mountain landscapes. Mr. Churchill, who has ever been a respected and popular landlord, opened the house two years ago, furnished completely to suit his taste. He is now improving a fine park adjacent to the hotel, containing flowers, shrubbery, summer-houses, arbors, fountain, aquarium, etc. A more desirable summer resort for city families will be hard to find in this State.

SCIENTIFIC EXCURSION.—The members of the California Academy of Sciences will make another scientific excursion to-day. They will go by the San José railroad to the "Twelve Mile Farm," whence they will proceed to the hills, some two miles to the westward, where there are some interesting fossils to be obtained, and other things which will more particularly interest the naturalists and botanists. The managers of the road have tendered a free pass for the trip.

COMMUNICATIONS RECEIVED.—"Some Facts about the action of Electricity on Metallic Substances," by Edward Pique; "What is a Mining Engineer," by J. S. Phillips, C. E. M., etc.; also, a "Letter from Grass Valley," by "Hermes."

We commence, in the present issue, a very interesting series of letters from A. J. Hawk, on the "Reese River Country and its Mines," which will be continued for several weeks.

## Gas Manufacture—The Ensley Process.

The second act of Omnipotence—that which immediately followed the calling into being of our earth, was the creation of LIGHT. Both revelation and science attest that light was the first material force made manifest in the embryo universe. Light must have been the natural result of the clash of atoms which followed the first act of creation. The daily experience of both social and organic life, declares light to be one of the chief necessities of both animal and vegetable existence.

One-half of all time, upon any given spot of the earth's surface, is devoid of the presence of natural light. It has been ordered, and who can doubt the wisdom thereof, that man, to enjoy the earth, should first subdue it. Our bread is earned by the sweat of the brow; and it is but consistent with the harmony of Divine economy that the production of artificial light should be one of man's first and most earnest endeavors. Such has been the case; and the iron arteries which everywhere thread their underground way along the streets of our principal towns, feeding the brilliant constellations of light which shed their soft influence through our drawing-rooms and along our pathways, when compared with dingy oil-lamps and miserable tallow-dips of past years, full well attest that the rapid strides of modern discovery have not been lagged in this most important field of enterprise and labor.

## THE SOCIAL VALUE OF LIGHT.

In a land like our own where intelligence rules, and where the greatest good of the greatest number is our leading political maxim; where the pleasures of the domestic circle are so universally enjoyed and so highly prized, artificial light should no longer be considered a luxury; it should be regarded as an absolute necessity—an indispensable requirement of existence. Its universal dispensation at the lowest possible cost, should claim our most earnest attention, and should be made a matter of public policy. Next to cheap food, a cheap illumination is a great desideratum for the people, and a boon which every philanthropist should hail as a most valuable attainment. Modern chemistry, as already intimated, has done much in this direction. What it has done, however, appears to have been accomplished almost at a bound, with the first introduction of gas; as but little advance has been made in the science of gas-making since its original introduction. Various other illuminating agents, however, in the way of animal, earth and vegetable oils, have been from time to time devised or discovered; but the gas of to-day is about the same as that first introduced into practical use in 1798, by Mr. Murdoch, at Boulton & Scott's works, at Soho, in the north of England. It was coal gas then—it is coal gas now, with but little difference in quality or manner of manufacture; although the material generally furnished in the United States is somewhat better than that supplied to European cities.

## IMPROVEMENTS IN GAS MANUFACTURE.

The public have waited long and patiently for some important discovery in this direction, which should cheapen if not improve our gas light; and there has been good cause for expectation. Water gas, wood gas, peat gas, atmospheric gas, petroleum gas, decomposition of zinc and steam—all, with variations innumerable, have each in turn been proposed, tried and abandoned and the people have been disappointed in their expectations; yet it has long been acknowledged that the field is a promising one, and full of compensation to any person who will attain even a moderate degree of success.

Notwithstanding the fallacious and impractical ideas with which we have been hitherto disappointed, it does appear that at last a new era is dawning upon the history

of gas lighting—one which promises to touch our gas companies in a tender place, and arouse them from the lethargy into which they appear to have fallen, in consequence of the innumerable failures to improve upon the old routine of manufacture.

## THE ENSLEY GAS.

The experiment which has been made at the Pacific Woolen Mills, under the direction of Mr. Whiteside, as agent for the patentee, is but a repetition of what has been done in several localities at the East, and wherever done is pronounced a success. The art of manufacturing gas from wood, either mixed or unmixed with other substances, is not new. But we are not aware that any such gas has before been made, chiefly from wood, of a sufficiently high illuminating power to secure its general introduction, either into cities or towns. Neither is it any new thing that illuminating gas may be obtained from animal refuse. Seguin, a French chemist, has carried out this process on a large scale, and the San Francisco Sugar Refinery has long been lighted by gas chiefly produced from animal matter; but such manufacture is impracticable on a large scale, and can only be made economical there by the necessity which exists at that establishment of making their own bone-black; the gas being chiefly the waste product of that manufacture.

The novelty and merit of Ensley's invention consists in the discovery of a combination of vegetable and animal matter, and the subjection of the same to a proper degree of heat under proper conditions, whereby a good illuminating gas can be obtained, which will also leave certain valuable commercial products as a residuum. The construction and combination of the apparatus by which these results are effected, is what the inventor claims as *new*, and for which he has obtained patents in the United States and Canada.

Mr. Ensley is said to have spent seven or eight years in studying and experimenting before venturing to introduce this gas to the public. That he produces an excellent illuminating gas, is beyond contradiction. That his process possesses novelty as well as merit, appears to be equally certain. That in its production he can effect a vast saving over the ordinary manufacture, seems to be also well attested.

It is well known to manufacturers of gas and refiners of petroleum, that very diverse chemical results follow the treatment of the same materials at different temperatures and under different conditions of condensation. Mr. Ensley appears to obtain his advantages from a judicious application of heat to the retort, and a proper commingling and cooling of the resultant gases. In the Ensley gas, separate retorts are used for the distillation of the wood and for the animal matter. The gases from these two materials are not allowed to mingle until after a perfect separation and condensation has been made of the product of each retort, by which the fixed gases are fully eliminated from those which are condensable at a temperature of about 60° Fah. Special care is also taken that the crude materials are subjected, as near as may be, to that temperature which is capable of producing a maximum amount of gaseous products.

## THE SOURCE OF ARTIFICIAL LIGHT.

All kinds of material that can be economically used as sources of artificial light, are chiefly composed of only two of the known elements of matter—carbon and hydrogen. All animal and vegetable matter, whether in its living form, or whether fossil, as in coal and petroleum, is composed essentially of these two important elements. The sublimest economy in nature is the storing up, in fossil form, of such immense quantities of these elements, so essential to the existence and social progress of man. The value of these elements in the economy of the world, is in proportion to the purity in which they are found, and the diversity or speciality of their application, depends upon

the relative proportions in which they are combined. If we desire to produce an intensely concentrated and economical fire, we obtain as near as possible a pure carbon—anthracite, coke or charcoal. Such a fire will give no flame; the act of combustion is fully completed the instant the oxygen of the atmosphere is impacted upon the surface of the coal. If we desire a flaming fire, we obtain a fuel which is largely mixed with hydrogen, as a *dilutor* of the heat—spreading it over more surface in the form of a flame. Bituminous coals, oils and wood accomplish this.

It has been found, that if heat is applied to these vegetable or animal compounds of hydrogen and carbon, in a close vessel from which the oxygen of the air is excluded, as in a gas retort, a large portion of the hydrogen and carbon, which previously existed in chemical combination in a solid form, will be evolved in a gaseous combination, which may be collected and used as a light-producing agent. The intensity and value of this light depends upon the character of the combinations made in the retort. If a gas is evolved containing but a small amount of carbon with a large proportion of hydrogen, a very dim light will be produced; on the contrary, if the combination is one where the carbon and hydrogen are nearly or quite equal, a bright light will be produced, but attended with insufferable quantities of smoke, in consequence of the excess of carbon.

## THE DIFFICULTIES ENCOUNTERED IN GAS MANUFACTURE.

One of the great difficulties encountered in gas manufacture is to properly control the chemical combinations within the retort. Another, and perhaps the greatest difficulty of all, is to get rid of the numerous impurities or substances deleterious to light and health, which are invariably evolved from the retort, along with the desired combinations of hydrogen and carbon. No less than fifty-nine different combinations of carbon, hydrogen, nitrogen, oxygen, sulphur, etc., are known to be evolved from the distillation of coal. Of these seventeen are fixed gases, and forty-two condensable at a temperature of 60° Fah.; seven of the latter are acids; fifteen are neutral, and twenty are alkalies. Of these fifty-nine constituents, all but five may be considered as impurities, which it is desirable should either be avoided or got rid of by purification. The five desirable constituents or illuminating agents are—Acetylene, C<sup>2</sup>H<sup>2</sup>; Olefiant gas, C<sup>2</sup>H<sup>4</sup>; light Carbureted hydrogen, (marsh gas), C<sup>2</sup>H<sup>4</sup>; Hydrogen, H and Carbonio Oxide, C O.

## THE SELECTION OF MATERIALS FOR GAS MANUFACTURE.

The innumerable variations of organic matter presented to the gas manufacturer, affords a great choice in their economy and degree of fitness for the production of gas. Hitherto, nearly all gas has been produced from coal; probably for the reason that attention was first directed to that source of supply from its natural exhalations from coal in place. In fact it is only quite recently that any very extended knowledge of the production of gas from other organic matter than coal has been attained.

It may readily be conceived that organic matter which has been suffered to undergo partial decomposition, and which has been subjected to the mineralizing influences of the earth and water for untold ages, must have taken up a large amount of material which must inevitably be detrimental to the production of the simple combinations of hydrogen and carbon, which alone are desirable for illuminating purposes. It does not need the chemist's art to convince us that of the forty-six combinations which the gas manufacturer endeavors to get rid of, a large portion have found their way into combination with the coal during the long interim of its deposit in the earth as a fossil, and the terrible convulsions and slow



process of mineralization which it has there undergone.

This very fact is sufficiently suggestive of the effort to obtain an illuminating agent from living organic matter, before it has become contaminated by time and the elements. The hint has not been overlooked, as may be seen from the long list of patents that have been taken out for obtaining gases from other material than coal; but one scheme after another has been undertaken and abandoned, and none appear to have made any real progress beyond the laboratory, except that of Mr. Ensley.

#### THE CHEMISTRY OF THIS PROCESS

Is, as yet, but very little known, even by the inventor himself. The result obtained seems to have been a "happy hit," rather than a conclusion from previously known facts. In this he is not without precedent; nor is the discovery any the less valuable therefor. A definite and permanently controllable result is obtained; a light is produced fully equal to that from the best coal gas, and far cheaper—precisely the two conditions which have been so long sought after. It would be impossible for us to go into the chemistry of the process, without long and patient research, to be accomplished only by the aid of proper appliances. We must, for the present, be satisfied with the result. That is patent to every one who will take the trouble to go and see the gas, which can be done six evenings in the week at the Pacific Woolen Mills in this city.

The reports from the works of the Cobourg (Canada) Company, are quite full and positive as to the character and permanency of the gas. Its traveling properties are said to be quite equal to that of the best coal gas; the lights at the extremity of the pipes—over a mile and a quarter in direct line, and nearly three miles by the circuitous course of the pipes—burning as brilliantly as those near the works.

That the gas is quite different from the ordinary coal gas, is made sufficiently apparent by the sense of smell alone. It is much less offensive, having nothing of the unpleasant odor of sulphureted hydrogen, as is the case with common gas; but has a slightly pungent, empyreumatic smell. There is every reason for believing that a person would suffer no serious inconvenience from this gas, in a room where death would follow from a liberation of the same amount of ordinary coal gas.

#### ITS ECONOMY.

The accuracy of the following statement of proportions of materials employed in the manufacture, and the resulting residuums, are vouched for by Mr. Moffat, the lessee of the Cobourg (Canada) Works above alluded to.

*Memorandum of cost of manufacturing Gas from Ensley's Patent, as demonstrated by practical test at Cobourg, from one cord of pine wood and 1,000 lbs. of bones.*

Dr.		
One cord pine wood.....	\$2 00	
One-half ton bones.....	4 00	
Three-quarters cord hard wood for fuel, \$3 25 cord.....	2 15	
Cost of labor.....	2 00	
	\$10 15	

Amount of gas produced 15,000 cubic feet, making the cost 67½ cents per 1,000 feet, without taking into account the sale of the residuums—estimate of cost and proceeds of which are as follows:

Cr.		
40 bushels charcoal, at 5c.....	\$2 00	
50 galls. tar at 8c.....	4 00	
12 galls. oil of turpentine, at 20c.....	2 40	
770 lbs. bone black, \$1 30 100 lbs.....	7 70	
½ bbl. ammonia.....	1 00	
	\$17 10	

Less cost of separating turpentine, tar ammonia, etc..... 2 00

Leaving a net profit on the residuums of \$4 95

And the gas free.

COST OF PRODUCING 15,000 FEET CUBIC OF GAS IN SAN FRANCISCO.

The above figures converted into California rates, may be stated about as follows:

Dr.		
1 cord of pine wood.....	\$9 00	
½ ton of animal refuse.....	8 00	
¾ cord of hard wood.....	6 00	
Labor.....	3 00	
	\$26 00	

Cr.		
55 bushels of charcoal.....	\$5 00	
90 galls. tar at 10c.....	9 00	
12 galls. oil turpentine.....	4 50	
770 lbs. bone black.....	7 70	
½ bbl. ammonia.....	1 00	
	\$23 20	

Loss the cost of separating the residuums 3 20

\$20 00

\$ 6 00

Cost of manufacturing 15,000 cubic feet of gas, six dollars, or forty cents per one thousand feet. To this of course must be added the cost of superintendence and interest on investment; for which it will be

seen a very large margin is left. The time occupied in completing a charge of similar gas producing capacity, when wood and animal matter is employed, is only about one-third that required for a charge of coal. We have set down the production of charcoal at only 35 bushels to the cord of wood, instead of 40, as given in the Cobourg report.

#### THE SUPPLY OF THE CRUDE MATERIAL.

We have heard it intimated that it may be found difficult to procure the necessary material for this manufacture. A little enquiry, however, must soon satisfy any person that no difficulty need be apprehended in that direction. An abundance of wood well suited to the manufacture, may be obtained in the mountains back of Redwood City. With regard to the animal matter, a few figures from well established statistics will also set that at rest.

A city of 100,000 inhabitants will need for its weekly supply of meat, the following animals in about the proportion given below:

Hogs—400, say weighing on an average 200 lbs.—50,000 lbs.; bones, say one-tenth of carcass.....	8,000
Cattle—500, say weighing on an average 700 lbs.—350,000; bones, say one-fourth of carcass.....	87,500
Sheep—2,400, say weighing on an average 65 lbs.—156,000; bones say one-sixth of carcass.....	26,000

Making the weekly amount of bones..... 121,500 Or over sixty tons.

The amount of gas which can be produced by the Ensley Patent process, from that amount of bones, together with the proper proportion of pine wood, would be as follows:

60 tons bone will produce at least.....	420,000 feet of gas.
120 cords of pine will produce at least.....	1,200,000 "
Am't of gas that could be made weekly.....	1,620,000

That amount of gas is largely in excess of any reasonable demand for a city of the population named. But if by any possibility there should be a deficiency in animal matter, we can here obtain an almost unlimited supply from the useless fish in our harbor, tons of which, unfit for food, are thrown out of the nets of the fishermen, to say nothing of the immense number of porpoises which swarm in our bays, and which can be delivered on our wharves at a cost not exceeding that of bones, while they will yield a much larger quantity of gas. The supply will also be still further and greatly increased by the large number of horses, and other animals which are unfit for food.

Gas companies, already started, need be under no apprehension of any depreciation in their property, in case of the fullest success of the new process, as it is but a simple and inexpensive matter to alter any ordinary gas works to suit the Ensley process, while no stoppage of the regular production of gas will be required to inconvenience our citizens. The invention is certainly well worthy the examination of our gas companies and of capitalists generally. We hope soon to see it tried on a still larger scale than that employed at the Pacific Woolen Mills.

#### [Special Notice.]

**B. C. HORN & Co.**—The name of this old firm must mingle with every California pioneer's recollections, and must inevitably be allied with that of the choicest brands of Tobacco and Cigars, most of which they have been for many years the sole agents for. With the opening anew of the Virginia tobacco trade, and the increase of business facilities at Havana, Messrs. B. C. Horn & Co. come again proudly before the public with a full columned catalogue of old Virginia and Havana's best productions—known and varied brands of the choicest flavor of "the weed." Turn to their advertisement in to-day's PRESS, and see the list of the good old familiar brands once more in market.

**Gold Bars**, of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

**Stebbins' Grinder, Amalgamator and Concentrator**, combined and all within the same pan, can now be seen in operation at the Franklin Foundry, Fremont street, between Mission and Howard. Sulphurets perfectly concentrated within thirty minutes on the rim of the pan near the surface of the water—the process of grinding and amalgamating going on at the same time. All the inventor asks is an examination of his new Concentrator, believing it to be the best and quickest ever yet invented. 14v14 tf

**Save Your Teeth**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEEN'S, corner of Pine and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with pure gold—thus restoring them to their original usefulness and beauty.

Call and examine the work. Finest quality of artificial work also manufactured. 16v14 tf

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*; or address DEWEY & VAUGHN, Mountain Messenger office, Downieville, Sierra County, Cal. 7v14tf

## B. C. HORN & CO.,

IMPORTERS OF

### Fine Havana Cigars

—AND—

VIRGINIA MANUFACTURED TOBACCO,

AT THE OLD STAND,

Southwest cor. Clay and Front streets,

SAN FRANCISCO.

A WELL ASSORTED STOCK

—OF—

HAVANA CIGARS,

CHEWING,

Smoking, Manufactured

—AND—

LEAF TOBACCO AND SNUFF,

ALWAYS ON HAND.

Horn's Best,  
Cabanas,  
Bella Mar,  
Ramon Rosales,  
El Encanto,  
Juan Martinez,  
La Favorita,  
La Fama,  
Republicana,  
Carmelita.

Buen Fumar,  
Adelina Patti,  
Avellana,  
Commerciante,  
Oen. Sheridan,  
Manzanar,  
De Alberne,  
Castelo,  
Oen. Grant,  
La Rosa.

Century,  
Forest Rose,  
Solace,  
Crums of Comfort,  
Liberty Boy,  
Young America,  
Savory,  
Standard,  
Solar,  
Sunnyside.

Golden Luxury,  
Bouquet,  
Big Lick,  
Forest Rose,  
Grand Turk,  
Knickerbocker,  
La Flor de Tabac,

Nonpareil,  
Our Pet,  
Pride of the Union,  
Queen of the Pacific,  
Star of the West,  
Turkish,  
Universal,  
Wadawantuck,  
Excelsior.

American Gentleman,  
Scotch,  
Rappee,  
Maccaboy,  
Tabac de Paris.

Nature's Bounty,  
Our Favorite,  
Flowers of the Forest,  
Fruit Juice,  
Atlantic Cable,  
Jewel of Ophir,  
Jesse Hare Reed,  
Nectar of Roses,  
Washoe,  
Signal.

Golden Apple,  
Bouquet,  
Pippin,  
Pear Brand,  
Horn of Plenty,  
Black Hawk,  
Melon,  
M. B. Allen,  
Citron.

The facilities for importing from Virginia and Havana, enjoyed by this House, cannot be excelled by any establishment on the Pacific Coast. 16v14-1t

**Builders' Insurance Company—**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 10v14-9pqr

## STEAM Family Chartres Coffee AND SPICE MILLS.

Established July 1, 1856.

FIRST PREMIUM

Awarded by the Mechanics' Fair, 1855, for the best Coffee and Spices.

CHARLES BERNARD,

MANUFACTURER OF AND DEALER IN

Family Chartres Coffee

—AND—

SPICES OF ALL KINDS,

No. 707 Sansome street, between Jackson and Pacific,  
SAN FRANCISCO.

Goods of the best quality. Has no fear of Counterfeits—each package bears the signature of

C. BERNARD.

Has never employed any Chinese Labor. 15v14-10p3m

MARTIN L. HAAS,



Pearl Shirt Manufacture,

Southeast corner Sansome and Halleck sts.,

15v14-9plm SAN FRANCISCO.

## PACIFIC

Rolling Mill and Forge Co.,  
SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

—ALSO—

HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention.

The highest price paid for Scrap Iron. 9v14-3m9p

## A. S. Hallidie & Co.,

MANUFACTURERS OF

FLAT & ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on the Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire Rope—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wild streams. Ferry Blocks supplied.

Iron and Copper Wire Cord—½ to ¼-inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

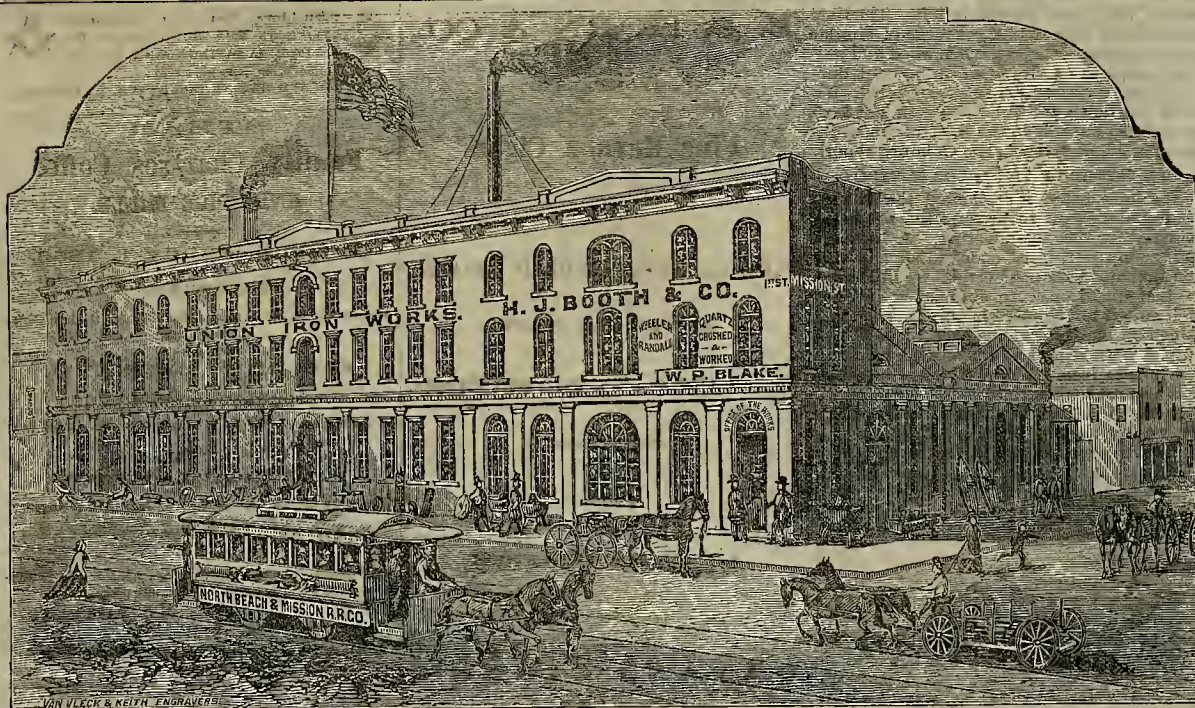
Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Gr. 100 ft. 100 ft. 100 ft.	Gr. 100 ft. 100 ft. 100 ft.	Gr. 100 ft. 100 ft. 100 ft.	Gr. 100 ft. 100 ft. 100 ft.	Gr. 100 ft. 100 ft. 100 ft.
2 50 1%	2 50 1%	2 50 1%	2 50 1%	2 50 1%
3 83 2	3 83 2	3 83 2	3 83 2	3 83 2
5 170 2½	5 170 2½	5 170 2½	5 170 2½	5 170 2½

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6m9p

## Boy Wanted.

About fifteen or sixteen years of age, for errand and mailing clerk. Must write a good hand, and come well recommended. Address or apply at this office.





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coluing Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's Improved flat bottom pan, Beldin's pan, Vetch's tubs, Prater's concentrators, Wakley's pans, Boers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.

H. J. BOOTH & CO.

## Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**

**STEAM ENGINES AND QUARTZ MILLS**  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing.**

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**

**NEW GRINDER AND AMALGAMATOR**

HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**

**Tyler's Improved Water Wheel,**

Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**

WITH PALMER'S PATENT STEAM OREST,

Superior for working either Gold or Silver Ores.

**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

**WILLAMETTE IRON WORKS,**  
**PORTLAND, OREGON.**

**Steam Engines, Boilers,**

**SAW AND GRIST MILLS,**

**MINING MACHINERY, WROUGHT IRON SHUTTER**

**WORK, AND BLACKSMITHING IN GENERAL.**

Corner North-Front and E streets,

18v13-ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
**Sacramento.**

**WILLIAMS, ROOT & NEILSON,**

MANUFACTURERS OF

**CROSS' PATENT BOILER FEEDER,**

**STEAM ENGINES, BOILERS,**

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

**Dunbar's Patent Self-Adjusting Steam Piston**

**PACKING**, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**

No. 220 Fremont street, between Howard and Folsom,

SAN FRANCISCO.

Has always on hand a general assortment of PICKS for Quartz and Surface Mining.

Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction.

19v13-y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**

Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**

**And Quartz Machinery, Printing Presses,**

—AND—

**MACHINERY OF EVERY DESCRIPTION MADE AND**

**REPAIRED.**

Special attention paid to Repairing. — 27 qy-3

**SAN FRANCISCO**

**Foundry and Machine Works,**

N. E. Cor. Fremont and Mission streets,

Manufacturers of

**Marine and Stationary Engines**

Quartz Machinery, Saw, Flour and Sugar Mills, Mining

Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

**Wine, Cider, Cotton and Tobacco Presses**

of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**

Of all sizes, constantly on hand; Quartz Mill Shoes and

Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston**

**Packing**, requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS**

Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-ly **DEVORE, DINSMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**

**STOCKTON, CAL.**

**KEEP, BLAKE & CO.,**

MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam**

**Engines, Horse Powers,**

Mining and Irrigating Pumps, Car Wheels, Derrick Irons,

House Fronts, Iron Fencing, Balcony Railings, etc.,

at San Francisco prices. Orders solicited

and promptly executed.

18v13-ly

LEWIS COFFEY. J. S. HESDON

**LEWIS COFFEY & RISDON,**

**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the

Pacific Coast owned and conducted by Practical Boiler

Makers. All orders for New Work and the repairing of Old

Work, executed as ordered, and warranted as to quality.

Old Stand, corner of Bush and Market streets, opposite

Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY.**

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal

Castings, Brass Ship Work of all kinds, Spikes, Sheathing

Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and

Gongs of superior tone. All kinds of Cocks and Valves, Hy-

draulic Pipes and Nozzles, and Hose Couplings and Con-

nections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL. [18v13-ly] J. H. WEED. 6v12-ly

J. O. HANSCOM } **HANSCOM & CO.,** { T. PENDERGAST.  
H. S. SMITH. } W. W. HANSCOM.

**Etna Iron Works!**

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

**Practical Machinists and Iron Founders,**

MANUFACTURE

**STEAM ENGINES,**

QUARTZ MILL MACHINERY OF ALL KINDS,

**SAW MILLS, FLOUR MILLS,**

**Dunbar's Improved Self-Adjusting**

**PISTON PACKING,**

Now so extensively used in the East and in this State. Re-

quires no springs or screws; is always steam-tight; without

excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**

The best of the kind now in use in this State or anywhere else

**Wheeler & Randall's New Grinder and**

**Amalgamator,**

Which only needs examination to be appreciated.

**Tyler's Improved Water Wheel,**

Giving greater power, at lower cost, than any wheel in use

Send for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or

the money will be refunded.

**Sole makers for this coast of the "Pendergast**

**White Iron Stamp Shoes and Dies.**

None genuine unless obtained from us. Every one war-

anted.

Patented Machinery of all kinds will be furnished by us

at market prices. Particular attention given to drawings

and specifications of machinery, which will be made to

order. The patronage of the public is respectfully solicited.

18v12

**FULTON**

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**HINCKLEY & CO.,**

MANUFACTURERS OF

**STEAM ENGINES,**

**Quartz, Flour and Saw Mills,**

**Moore's Grinder and Amalgamator, Brodie's**

**Improved Crusher, Mining Pumps,**

**Amalgamators, and all kinds**

**of Machinery.**

Nos. 45, 47 and 49 First street, between Market and Mis-

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3-qy

**NEPTUNE IRON WORKS,**

Corner of Mission and Fremont Streets,

SAN FRANCISCO.

**MARINE,**

**Locomotive,**

And all kinds of

**HIGH PRESSURE**

**Steam Boilers**

MADE

All Boilers guaranteed and

tested by U. S. Boiler In-

spector before sent out of

the Shop, at Shop expense.

All kinds of Sheet Iron and

Water Pipe, Coal Oil

Stills, Wrought Iron

Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired.

D. CAMERON.

A PARIS chemist carried into a theater at 10 o'clock at night, a bottle of ice on a plate, and collected the vapor which condensed rapidly upon it. At first the vapor had the smell, the taste, and so far as could be determined, every chemical quality belonging to the waters of the most deadly fever marshes. Under the microscope, this water was at first clear, but in a week, it was found to be full of animalculæ. A little later these animalculæ had grown, and the big ones were seen pursuing and devouring the little ones. Still later, at the end of two months, the water was thick with animalculæ; various forms were seen, and still the work of destruction was going on. At last but three hideous monsters were seen—microscopic monsters of course, since they were contained in a drop of water—and these were still fighting to see which could devour the other. At the end of three months the water became clear and miasmatic again.

**Forty-Nine and Sixty-Seven.**—The place where once stood one of the most important mining villages in the State (known as Rose's Bar) teeming with the business of some six hundred miners, is now forty feet under ground, made by tailings from the neighboring mountains. The once high and rugged mountain immediately back of the bar, has been, for years passing away, but the richest and best portion is still to be worked. This mountain has furnished the rich hydraulic mining of Smartsville and Timbuctoo for years past, and is still paying.—*North Californian.*

**PUTTING OUT A FIRE IN A MINE.**—During the process of extinguishing the fire in the colliery of Clackmannan, near Stirling, England, in 1851, the mine was filled with about 8,000,000 cubic feet of carbonic acid gas, a continuous stream being kept up night and day for about three weeks. The mine extended over a surface of twenty-six acres, and had been thirty years on fire.

**TOWNE & BACON,**  
**Book and Job Printers,**

**Have the Largest Office,**

**Do the most work,**

**And do it better**

**Than other offices**

**In this City,**

**536 Try them**

**With a Job,**

**And you will be**

**Satisfied the above**

**Statements are facts.**

**Their office is at 536**

**Clay St., below Montgom'y,**

**Over Pacific Fruit Market.**

**CITY IRON WORKS COMPANY.**

F. CLERC, D. KLEINCLANDS, W. DEBBIE.

**CLERC & CO.,**

**Iron Founders, Steam Engine Builders, and**

**Makers of all kinds of Machinery.**

No. 28 FREMONT STREET, San Francisco.

9v146m

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**SOUTH BEACH IRON WORKS,**

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**MARINE ENGINES,**

AND ALL KINDS OF

**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to

order. Jobbing of every description promptly attended to.

All work done guaranteed.

13v14-ly

**JOHN LOCHHEAD'S**

**Steam Engine Works,**

Beale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**

to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**

PORTABLE ENGINES, OF ALL SIZES,

**DONKEY PUMPS, Etc., Etc., Etc.**

The attention of the parties engaged in shipping or inland

navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San

Francisco for the last fourteen years, and enjoys the repu-

tation of having built ONE HUNDRED AND SEVENTEEN

STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery

generally, made to order, and warranted to give perfect

satisfaction in every particular.

25v12-3m

**Mechanical Drawings.**

Persons wishing Mechanical Drawings can obtain the

services of competent draughtsmen, by applying to this

office.









OF MILWAUKIE.

OVER FIFTEEN THOUSAND MEMBERS:  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1867, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14qr1tle12p

## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.

CAPITAL STOCK, - - - \$500,000

### Trustees:

H. P. WAKELEE, THOS. H. SELBY,  
NICHOLAS LUNING, THOS. BELL,  
CHAS. E. McLANE.

H. P. WAKELEE.....MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office only for Chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the ad-  
vantages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14-3m

## Overland Route.

## THE PENINSULAR AND ORIENTAL

STEAM NAVIGATION COMPANY'S

### STEAMSHIPS

Leave Hongkong Twice a Month,

(On the 1st and 15th in the Northeast Monsoon,  
and about the 11th and 29th in the  
Southwest Monsoon.)

-FOR-

SOUTHAMPTON AND MARSEILLES,

VIA. EGYPT,

Calling at Singapore, Penang,  
Point de Galle, Aden, Suez, Alex-  
andria, Malta and Gibraltar.

From Point de Galle their steamers run to Madras,  
Calcutta, and Bombay, twice a month, and once a month  
to King George's Sound, Melbourne and Sydney.

From Hongkong their steamers run constantly to  
Swatow, Amoy, Foochow, Shanghai, and Yokohama.  
HONGKONG, 1867. 13v14tf

### PATENT BUSINESS.

We have lately associated with us in the Patent and Me-  
chanical Department of the Mining and Scientific Press, a gen-  
tleman of superior ability and attainments, who has ar-  
rived direct from the leading patent agency in New York  
city, and having a faithful and reliable associate in Wash-  
ington City, we are now better than ever before prepared  
to secure the claims of our applicants, in a careful, prompt  
and efficient manner. DEWEY & O'G.,  
San Francisco, Jan. 1867. Patent Solicitors.

**Economy in Advertising.**—The MINING AND SCIENTIFIC  
PRESS is the best and most economical mining adver-  
tising medium in this city. Our terms are less than one  
half the rates now charged by daily newspapers, and the  
mining community are beginning to appreciate our reason-  
able rates of advertising. The Press contains, proportionally,  
a larger amount of mining advertising than any other paper  
on the Pacific coast. Its character renders it the proper  
journal for the concentration of mining patronage.

## Metallurgy.

BOALT & STETEFELDT,  
Metallurgists and Mining Engineers

AUSTIN, NEVADA.

Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

G. W. MAYNARD, J. H. TIEMANN,  
MAXNARD & TIEMANN,  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,

—AND—  
CENTRAL CITY, COLORADO.  
19v12 ly

## EUROPEAN METALLURGICAL WORKS,

Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE PROPRIETORS are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Tons lots of Ore adapted to the smelting process at-  
tended to. Sulphuretted pyrites, and the so-called "rebelli-  
ous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, refining by cupellation, done at moderate rates.

### PRACTICAL MINING SCHOOL.

The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting, re-  
fining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.

S. P. KIMBALL,

J. R. MURPHY,

10v10

## MOSHEIMER'S Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.

Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurates.

### CONSULTATION OFFICE:

328 Montgomery street, San Francisco.

J. MOSHEIMER,  
Engineer and Metallurgist.

26v13-3m

J. A. BAUER,  
Chemical Laboratory,  
AND DRUG STORE,

644 Washington Street. [Established 1849.]

SAN FRANCISCO.

Careful Analyses made of

Ores, Minerals, Waters, Oils, Liquors,  
Wines, Products of Art, etc.

Pharmaceutical Preparations Made to Order.

Opinions given on Chemical Questions and Geology.  
Particular attention paid to Analyses of all kinds, in  
cases where legal questions are involved.

Pure Nitric Acid. Nitrate of Silver, Gold Chloride, Platin-  
chloride, Sodium Amalgam, Sulphate of Copper, etc., for  
sale. 12v14-6m

## EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

WOOD AND COAL,

No. 513 Bush street, between Dupont and Stockton,  
14v14-6m SAN FRANCISCO.

Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
experience and successful experience in working ores in Washoe,  
and is practiced in saving sulphurates and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz operator. Address F. M. SHAW,  
San Francisco, care Mining and Scientific Press. 10v14-3m

## San Francisco Glass Works FACTORY,

Townsend street, between Third and Fourth

THESE WORKS (WHICH HAVE BEEN TEMPORARILY  
stopped for repairs) are now in operation, and are pre-  
pared to fill orders for every description of

### HOLLOW WARE GLASS,

All sizes of German Flint Prescription Vials, Fluted Pre-  
scriptions, Ovals, Extracts, Panels, Mustards, Sodas, Pack-  
ets, Wine Bottles, etc., etc. Chemists' Glass Ware, etc.  
Chinneys of every size and description, equal in quality to  
the best imported.

Private Molds made and lettered to order at short  
notice.

NEWMAN &amp; BRANNAN,

Proprietors.

13v14-1m

## Trades and Manufactures.

WM. BARTLING, HENRY KIMBALL,  
BARTLING & KIMBALL,  
BOOK BINDERS,  
Paper Rulers and Blank Book Manufacturers,  
505 Clay street, (southwest cor. Sansome),  
16v12-3m SAN FRANCISCO.

JOHN DANIEL,  
(SUCCESSOR TO O. GORD)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco

Mantels, Monuments, Tombs, Plumbers' Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
specially solicited. 6v8-3m

NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.

Bartow's Metallic Burial Caskets and Cases,  
117

THEODORE KALLENBERG,  
Maker of Models for Inventors.

MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
LOSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair-  
ing of machinery promptly attended to.  
No. 418 Market street, San Francisco. n7-1f

Palmer's Patent  
ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
629 Washington Street, San Francisco, Cal. 10v8-1m

HUCKS & LAMBERT,  
SOLE MANUFACTURERS OF THE CELEBRATED

H. & L.  
AXLE GREASE,  
Natoma Street and North Beach,  
SAN FRANCISCO.

2v13-3m

## PIONEER IRON SHUTTER WORKS!

Established 1849.

C. NUTTING,  
Manufacturer of

Fire-Proof Doors and Shutters,

BANK VAULTS, PRISON CELLS, BALCONIES, AWN-  
INGS, GRATINGS, IRON FENCE, STAIRS, Etc.,

123 Bush street,  
San Francisco.

11v14-1q

## LEATHER HOSE AND BELTING,

ALL SIZES.  
SUCTION HOSE MADE TO ORDER

At short notice, by

M. M. COOK & SON,

No. 801 Battery street,  
SAN FRANCISCO.

13v13-3m

SAN FRANCISCO  
Cordage Manufactory!

CONSTANTLY ON HAND A LARGE ASSORTMENT

—OF—  
MANILA CORDAGE,

Whale Line, Bale Rope, etc.,

Manufactured from Pure Manila Hemp.

Office, at TURBS & CO'S, 611 and 613 Front street.

Manufactory at the Potrero. 11v14-1q

CARDS Sterrett & Cubery

\$3 PRINTERS,

Per 1,000, 533 Clay street,

—AND—  
Circulars

NEATLY  
Printed

—AT—  
Low Prices.

MONTGOMERY STREET.  
19v13-3m

J. M. STOCKMAN,

Manufacturer of

PATTERNS AND MODELS,

(Over W. T. Garratt's Brass Foundry.)

S. E. Corner of Mission and Fremont sts.,

6v14tf SAN FRANCISCO.

WM. A. KOLLMYER,

LOOKING-GLASS

—AND—  
PICTURE FRAME MAKER,

No. 646 Clay street,

Near Kearny street, San Francisco.

19v12-6m

McNALLY & HAWKINS,

Plumbers and Gas-Fitters,

635 Market street,

Adjoining R. C. Orphan Asylum, nearly opp. Monty street,  
SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.

Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.

19v13-2q

To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS

County, with steam mill fitted up with Amalgamating  
Pans, etc. FOR SALE. The mine has three main veins,  
and more than \$30,000 have been spent in opening them and com-  
pleting the mill. Good wagon roads all the way. Apply to  
BELLOC FRERES, Bankers,  
535 Clay street, San Francisco.

23v13-6m

By MAIL.—The Mining and Scientific Press will be sent by  
mail to any part of the civilized world. In case of removal  
subscribers have only to inform us of the post office address  
of their old and new location, and the paper will be sent  
accordingly.

## Professional Cards.

SHERMAN DAY,  
Mining Engineer,  
No. 114 Montgomery Block, San Francisco.  
Will examine, survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
22q

CHAS. LIEBENAU,  
Mining Engineer and Metallurgist,  
(Graduate of the Mining Academy, Freiberg, Germany.)  
Oro, Flint District, Owyhee Co., Idaho.  
REFERENCES.—George Hearst, John W. Gashwiler, Riehn,  
Hemme & Co., and J. M. McDonald, San Francisco; E. R.  
Purple, New York; William Bigler, Penn. 14v14-3m\*

FREDERICK MANSSELL,  
Mechanical & Architectural Draughtsman,  
No. 422 California street, corner of Leidesdorff.  
Drawings of MONIES made for parties applying for pa-  
ents at Washington or London. mar23-1f.

GREGORY YALE,  
Attorney and Counsellor at Law,  
No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1856; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

E. V. JOICE,  
NOTARY PUBLIC,  
N. E. cor. of Washington and Battery sts.  
12v14tf SAN FRANCISCO.

JAMES M. TAYLOR,  
Attorney and Counsellor at Law,  
COURT-COMMISSIONER, appointed by the Fourth District  
Court, COMMISSIONER OF DEEDS for Nevada  
and Massachusetts.  
Court Block, San Francisco.  
Entrances opposite City Hall, Merchant street, and 638  
Clay street. 14v14tf

W. E. GOLDSMITH,  
Card and Seal Engraver,  
505 Montgomery street, up-stairs, (over Tucker's),  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

GEORGE H. POWERS, M. D.,

Gives exclusive attention to

Diseases of the Eye.

Office, southwest corner of Bush and Mont-  
gomery streets, Room 7 and 8. Office hours, 10<sup>1</sup>/<sub>2</sub> to 12, and  
2 to 4 o'clock.

References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and  
L. B. Beachley. 4v13tf

DR. H. AUSTIN,  
DENTIST,

No. 634 Washington Street,

Between Montgomery and Kearny Streets

[OVER SAN FRANCISCO BATHS]

SAN FRANCISCO. 20v10-qy

DR. A. HARTMAN,  
Electro-Magnetic Physician.

CURES ALL CURABLE DISEASES, BY THE CON-  
duction of the vital forces. Nature's own method of  
cure. The blind made to see, the deaf to hear, the lame  
made to walk, and the sick healed. Come and see the af-  
flicted at the rooms. They will speak for themselves. The  
poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating  
rooms, 410 Kearny street, between Pine and California.

21v13m

JACOB SHEW,

Pioneer Photographer,

612 Clay street, north side, four doors above Montgomery.

(Late 315 Montgomery street)

Takes all kinds of Photographs in the best style of the Art.

He would invite especial attention to the new "Cabinet  
Photographs," which he is taking to perfection.

10v14tf

Pacific Mail Steamship Co's  
STEAMSHIPS FOR  
NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11

o'clock A. M. of the following dates, for

PANAMA, connecting via Panama Railroad, with one of

the Company's splendid steamers from ASPENWALL for

NEW YORK.

On the 10th, 18th and 30th of each month that has

31 days.

On the 10th, 19th and 30th of each month that has

30 days.

When the 10th, 19th and 30th fall on Sunday, they will

leave on Saturday preceding; when the 18th falls on Sun-  
day, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at  
Manzanillo. All touch at Acapulco.

Departures of 18th or 19th connect with French Trans-  
Atlantic Co.'s steamer for St. Nazaire, and English steamer for  
South America.

Departure of 10th connects with English steamer for  
Southampton and South America, and P. R. R. Co's  
steamer for Central America.

The following Steamships will be dispatched on dates as  
given below:

April 30th.—CONSTITUTION, Capt. W. F. Lapidge,

Connecting with the RISING STAR, Capt. Maury.

Cabin passengers berthed through. Baggage checked  
through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attend-  
ance free.

These steamers will positively sail at 11 o'clock. Passen-  
gers are requested to have their baggage on board before 10  
o'clock.

Through Tickets for Liverpool by the Cunard, Inman and  
National Steamship Lines, can be obtained at the office of  
the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way  
ports, apply to Messrs. WELLS, FARGO & CO.

For passage and all other information, apply at the Pa-  
cific Mail Steamship Co's office, corner of Sacramento and  
Leidesdorff streets.

OLIVER ELDRIDGE, Agent.



**CRAWFORD'S ELEVATOR.**—We would call attention to the advertisement, in this issue, of Mr. Gluyas, who is agent for this apparatus in California. With this powerful aid, costing less than an extra horse, and weighing scarcely more than a barrel of flour, a mountain teamster can lift his wagon, load and all, out of the mud, and go on his way rejoicing. For miners who have large boulders to lift from their river beds, they are invaluable. Two men can, by its help, with ease raise a mass weighing twenty tons. The farmer, with his boy, can jerk out the most obstinate stumps with scarcely an effort. For a more extended description, see the MINING AND SCIENTIFIC PRESS for March 31, 1886.

**LEATHER HOSE.**—Six hundred feet of 6-inch hydraulic hose has, been lately put up at the leather hose and belting factory of M. M. Cook & Son, at the corner of Battery and Broadway, for the mines of Northern Oregon—no other being found to suit the purpose so well. The same firm have manufactured about the same number of feet of fire hose for an American company in Japan.

### National Mineral Land Law, Instructions, Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address DEWEY & Co., office Mining and Scientific Press, San Francisco.

### Perry Davis' Vegetable Pain Killer.

As an internal remedy, has no equal. In cases of Cholera, Summer Complaint, Dysentery, Diarrhea, Asthma, it cures in one night, by taking it internally, and bathing with it freely. It is the best liniment in America. Its action is like magic, when externally applied to bad sores, burns, scalds and sprains. For the sick headache and toothache, don't fail to try it. In short, it is a Pain Killer.

**PERRY DAVIS' PAIN KILLER.**—This medicine has become an article of commerce, a thing no medicine ever became before. Pain Killer is as much an item in every sale of goods sent to country merchants as tea, coffee, or sugar. This speaks volumes in its favor.—*Glen Falls Messenger.*

Sold by all Medicine Dealers everywhere. 14v14-1m

### Allen's Lung Balsam.

The following letter, from Dr. A. L. Scoville, who has had many years' experience in the medicine business, and with Lung Remedies, will give the afflicted still more assurance that the sure remedy is found at last; and the consumptive should lose no time in commencing the use of Allen's Lung Balsam:

CINCINNATI, January 9, 1884.

Gentle—I make the following statement from a perfect conviction and knowledge of the benefits of Allen's Lung Balsam, in curing the most desperate Pulmonary Consumption! I have witnessed its effects on the young and the old, and I can truly say that it is by far the best expectorant with which I am acquainted. For Coughs, and all the early stages of Lung Complaints, I believe it to be a certain cure, and if every family would keep it by them, ready to administer upon the first appearance of coughs about the lungs, there would be very few cases of fatal consumption! It causes the phlegm and matter to rise, without irritating those delicate organs (the lungs) and without producing constipation of the bowels. It also gives strength to the system, stops the night-sweats, and changes all the morbid secretions to a healthy state.

Yours, respectfully,  
A. L. SCOVILLE.  
Consumptives, do not despair, because all the remedies that you have tried have failed, but try Allen's Lung Balsam. Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.

Sold by all Medicine Dealers everywhere. 14v14-1m

### New Mining Advertisements.

**Arizona Consolidated Mining Company, Euclid District, Arizona Territory.**

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, will be held on MONDAY, the sixth day of May, 1887, at 7 o'clock P. M., at the office of the Secretary, 611 Clay Street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

G. W. BUNNELL, Secretary.

Office, No. 611 Clay Street, San Francisco. ap20

**Evoca Consolidated Copper Mining Company.** Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on THURSDAY, the twenty-third day of May, 1887, at 3 o'clock P. M., at No. 532 Merchant Street, Room No. 3, San Francisco, California. By order of the President.

R. S. CLYDE, Secretary.

**Hope Gravel Mining Company.**—Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of April, 1887, an assessment (No. 14) of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 629 Clay Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twenty-second day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, No. 629 Clay Street, San Francisco, Cal. my20

**Nostra Señora de Guadalupe Silver Mining Company.** Location of Works: Tayolita, San Dimas District, Durango, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifteenth day of March, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H. Brueningh.....	95	2	\$2.00
Wm. Gelmann.....	56	5	5.00
Wm. Gelmann.....	106	10	10.00
Wm. Gelmann.....	107	10	10.00
Wm. Gelmann.....	108	10	10.00
Wm. Gelmann.....	109	5	5.00
Wm. Gelmann.....	110	5	5.00
Wm. Gelmann.....	111	5	5.00
Wm. Gelmann.....	112	5	5.00
Wm. Gelmann.....	113	5	5.00
Jon. Mayer.....	77	5	5.00
W. H. Nelling.....	103	10	10.00
W. H. Nelling.....	104	10	10.00
W. H. Nelling.....	105	9	9.00
Anton Nolting.....	109	10	10.00
Chas. Prescheld.....	92	10	10.00
Chas. Schumacher.....	47	5	5.00
Chas. Schumacher.....	61	15	15.00
La Abra Silver Mining Co.....	156	550	550.00

And in accordance with law, and an order of the Board of Trustees, made on the fifteenth day of March, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Badger & Chapman, auctioneers, N. W. corner of Kearny and California streets, San Francisco, on Wednesday, the fifteenth day of May, 1887, at the hour of 1 o'clock, P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

E. J. PFEIFFER, Secretary.

Office, No. 210 Post Street, San Francisco, Cal. ap20

**Udon Copper Mining Company, No. 2.**—Ledge or Claim situated in Copper Canon District, County of Calaveras, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of April, 1887, an assessment of fifty (\$50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 416 California Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the tenth day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. V. E. TOUCHARD, Secretary.

Office, No. 416 California Street, San Francisco, Cal. ap20

### Mining Notices—Continued.

**Adella Gold Mining Company, Rock Creek, Sierra County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of April, 1887, an assessment of fifty (\$50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. C. TAYLOR, No. 429 Pacific Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the ninth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. C. TAYLOR, Secretary.

Office, No. 429 Pacific Street, San Francisco, Cal. ap18

**Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.**

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the nineteenth day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bailey, H. J.....	124	5	\$25.00
Calvert, William.....	124	5	25.00
Calvert, William.....	125	3	15.00
Grandel, O. L.....	188	40	200.00
Grandel, O. L.....	189	10	50.00
Donnell, Wm. M.....	127	3	15.00
Donnell, Wm. M.....	141	1	5.00
Donnell, Wm. M.....	161	2	10.00
Dowling, E. N.....	128	1	5.00
Dowling, E. N.....	115	1	5.00
Eggers, G. H.....	125	15	75.00
Fiedler,.....	91	20	100.00
Gatter, B.....	126	3	15.00
Gatter, B.....	134	3	15.00
Harashty, A.....	151	73	365.00
Harashty, Mrs. E.....	119	10	50.00
Hyatt, Caleb.....	131	3	15.00
Hyatt, Caleb.....	131	3	15.00
Hyatt, Caleb.....	135	7	35.00
Leisewitz, H.....	64	19	95.00
Leisewitz, H.....	65	15	75.00
Leisewitz, H.....	67	20	100.00
Leisewitz, H.....	68	10	50.00
Leisewitz, H.....	123	7	35.00
Loomis, W. E.....	163	15	75.00
Molitor, A. P.....	58	31	155.00
Molitor, A. P.....	59	20	100.00
Molitor, A. P.....	91	20	100.00
Molitor, George, in trust for A. P. Molitor.....	118	1	5.00
Noyes, W. A.....	118	2	10.00
Newman, S.....	139	3	15.00
Newman, S.....	157	2	10.00
Nelson, F. J.....	175	15	75.00
Park, H. J.....	238	50	250.00
Parkinson, Chas. A.....	162	2	10.00
Peterson, N. L.....	181	6	30.00
Patten, Farnell.....	169	20	100.00
Ronay, Hyacinth.....	169	10	50.00
Smith, R. H.....	189	3	15.00
Tichner, L.....	200	10	50.00
Uman, M.....	164	25	125.00
Valliant, J.....	204	10	50.00
Valliant, J.....	207	18	90.00
Volz, C. H.....	122	15	75.00
Woodhams, Oscar.....	17	20	100.00
Woodhams, Oscar.....	18	20	100.00
Woodhams, Oscar.....	20	20	100.00
Woodhams, Oscar.....	21	10	50.00
Woodhams, Oscar.....	22	10	50.00
Woodhams, Oscar.....	24	3	15.00
Woodhams, Oscar.....	94	6	30.00
Woodhams, Oscar.....	105	25	125.00
Woodhams, Oscar.....	133	3	15.00
Woodhams, Oscar.....	155	5	25.00
Woodhams, Joseph.....	165	20	100.00
Woodhams, Alfred.....	165	25	125.00
Woodhams, Lucy A.....	169	25	125.00
Woodhams, Mary E.....	170	25	125.00
Wolf, A.....	184	10	50.00
Wilke, F. C.....	210	10	50.00
Winn, Richard.....	179	6	30.00
Woodward, W. A.....	100	35	175.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 302 Montgomery Street, San Francisco, Cal., on the twenty-third day of April, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.

Office, 302 Montgomery Street, San Francisco, Cal. ap2

That excellent paper has donated a new dress of California manufacture.—*Reese River Recaller.*

**Butoplas Mining Company, Butoplas District, State of Chihuahua, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of April, 1887, an assessment (No. 3) of two (\$2) dollars per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, No. 311 Montgomery Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. MARTINON, Secretary.

Office, 311 Montgomery Street, up stairs, San Francisco, Cal. ap18

**Chilpana Mining Company—District of Ures, Sonora, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of March, 1887, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 318 California Street, up stairs, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 318 California Street, San Francisco, Cal. m9

**Camargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Camp, Jas.....	72	5	\$100.00
Drinkhouse, J. A.....	5	3	60.00
Dinkhouse, J. A.....	51	60	300.00
Harker, W. B. C.....	23	10	200.00
Harker, W. B. C.....	24	10	200.00
Harker, J. W.....	134	3	60.00
Jacobs, J. A.....	135	3	60.00
Fassett, N. C.....	132	1	20.00
Gray, Asaph.....	133	3	60.00
Lander, H. C.....	69	6	120.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1887, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, 402 Front Street, San Francisco. mar30

**Dardanelles Copper Mining Company, Low Divide District, Del Norte County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held at Crescent City, on the sixteenth day of March, 1887, an order was made annulling the assessments levied February 29th, 1881, April 7th, 1885, August 22d, 1885, and June 2d, 1886, and levying an assessment of forty-five (45) cents per share upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary at Crescent City, California.

All stockholders having paid on the aforesaid annulled assessments, will have credit on the new one only. Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the first day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. CURTIS, Secretary.

Office, at Woodbury & Marhofer, Crescent City, California. ap6

**Diana Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States Currency, to the Secretary, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the third day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the fourth day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, 402 Front Street, San Francisco. m30

**George Washington Gold and Silver Mining Company.**—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 18.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of April, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.

Office, 338 Montgomery Street, San Francisco. ap9

**Gold Quarry Company. Location of Works: Placer County, State of California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of March, 1887, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, (Room No. 4) No. 706 Montgomery Street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-second day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.

Office, Room No. 4, 706 Montgomery Street, San Francisco, Cal. m23

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—FOR—

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Orders from the Interior faithfully attended to.

**Keystone Mining Company. Location of Works: Copperopolis, Calaveras County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1887, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, No. 449 California Street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Monday, the twenty-ninth day of April, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. P. SUTTON, Secretary.

Office, 440 California Street, San Francisco. m9

**Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of April, 1887, an assessment of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 6 Government House, corner of Sansome and Montgomery Streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1887, will be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the eighteenth day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, No. 6 Government House, corner of Washington and Sansome Streets. ap6

**North Star Gold and Silver Mining Company, Reese River Mining District, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourteenth day of March, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately to the Secretary, GEORGE H. FAULKNER, No. 423 Front Street, San Francisco, Cal.







**BE CAREFUL.**—A Smartsville letter to the *North Californian*, says that Cray & Co., of that place, are running a 200-foot bed-rock tunnel, and have now been using nitro-glycerine for two months for blasting purposes, in preference to powder. The writer says the men handle it with perfect fearlessness. It is true that some of the usual sources of danger in powder blasting are done away with; for instance, the use of a tamping-bar, and the necessity of drawing a charge which has missed fire; but we fear that there will yet be sad experience in its use. It should, in our opinion, not be put into the hands of any but the most careful and intelligent of the workmen. The boldness which is bred by the constant familiarity with powder and its use, is not admissible in the handling of this agent. It is useless to deny that it is yet less perfectly understood than the other; and we urge, therefore, caution.

**HONOR TO WHOM HONOR IS DUE.**—The new mineral "Laurite," discovered by Prof. Wohler, which we mentioned in a recent issue, was so called in honor of the wife of Prof. Chas. A. Joy, of Columbia College, New York. Her name is LAURA.

Mr. Bodwitch states that clay removes ammonia from gas as perfectly as acids and metallic salts do. It has also a remarkable power of acting upon sulphureted compounds in gas, so as to render them removable. The foul clay is worth 21s. per ton as manure, and costs the companies very little.—*Mechanics' Magazine.*

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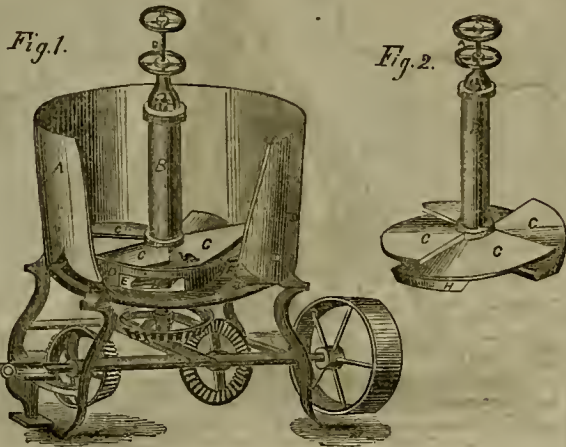
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tgomery street, San Francisco. 12v13-ly

**Gaston's Screw Grinder and Amalgamator**

—15—  
**The Best Yet Invented.**



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

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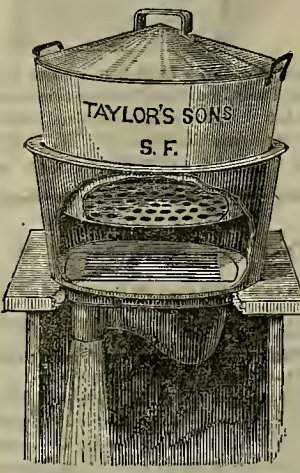
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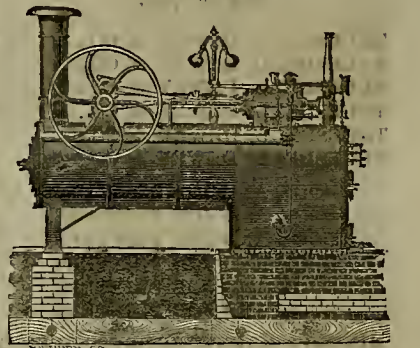
Such a journal has been needed on the Pacific Coast. The  
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**Portable Steam Engines!**

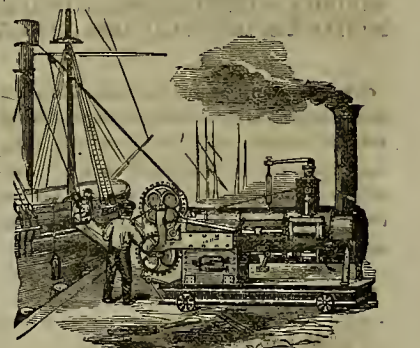
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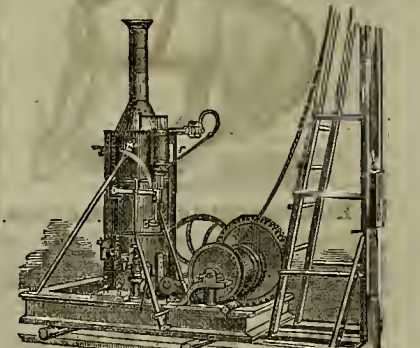
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motors which are crowding society and normalizing the  
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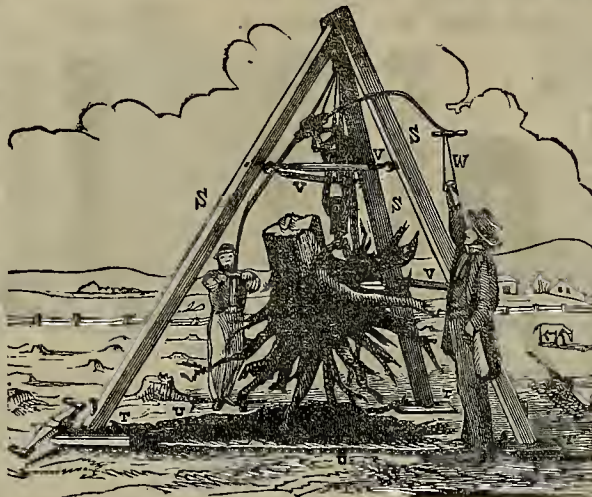
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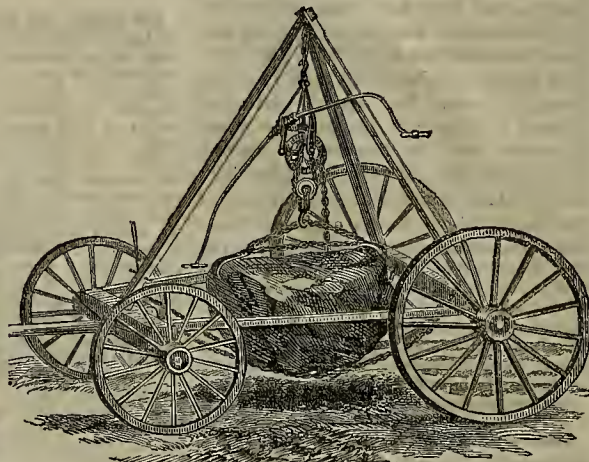
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These Machines are adapted to all kinds of work, and where labor is scarce they are invaluable. Two men can work the machine. A few of their uses are: Loading boilers, granite, heavy ordnance in casemate, or any heavy body. For mountain transporters they are of great value, lifting wagons, etc., clearing lands of stumps, moving boulders for millers, or for railway companies. There is scarcely any work of moving heavy bodies which they are not adapted to. Single Machines, or Right of City or County, and all information can be obtained by letter, or otherwise, by application to  
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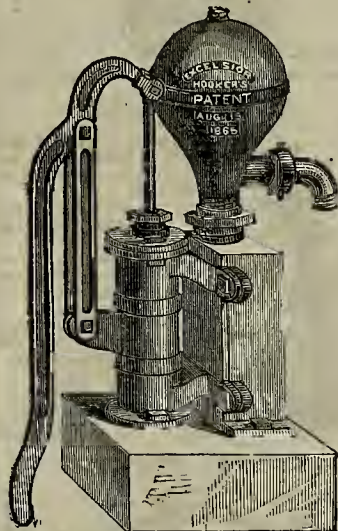
##### Double-Acting Suction and Force Pump.

Hooker's Patent, Aug. 15, 1865.

This Double-Acting Suction and Force Pump, the best in use, is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and is warranted to furnish more water, than any other Pump of equal caliber. It has Puppet Valves, faced with vulcanized rubber, which cannot be wrongly placed in the Pump. The valves can be changed without disconnecting air-chamber, suction or discharge pipes.

In case of necessity, the Pump can be run at any high rate of speed, and will furnish water proportionately. The Excelsior Pump is equally adapted to use for surface and deep wells or shafts. It can be run by windmill or horse power for irrigating purposes; also by hand or steam power on steamers and ships. For domestic use, no better Pump can be found.

Fig. 3.



By simply loosening the nut seen at the base of the Air-Chamber, the discharge nozzle may be turned, thus making a right or left-hand Pump.

Fig. 4.

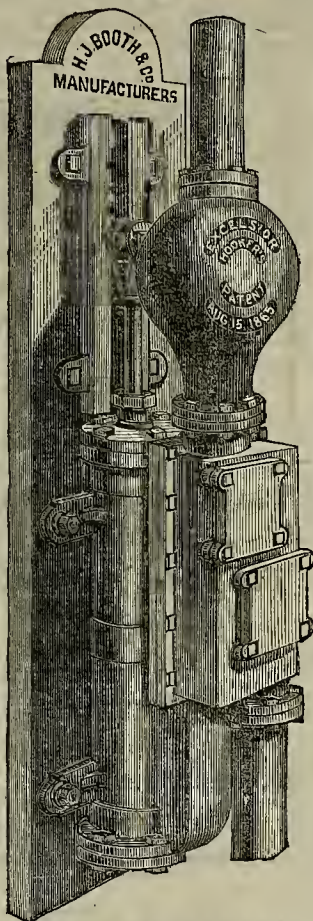


Fig. 3 represents a Hand Pump, which works very easy, and with even power. Fig. 4 is a 6-inch Mining Pump, showing adjustable bonnet of the valve chest.

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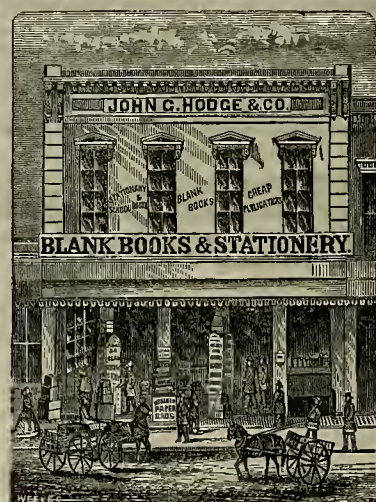
#### To the Mining Community.

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And Patent Solicitors.

SAN FRANCISCO, SATURDAY, APRIL 27, 1867.

VOLUME XIV.  
Number 17.

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## MINING SHAREHOLDERS' DIRECTORY

(Compiled for every issue, from advertisements in the  
Mining and Scientific Press and other San  
Francisco Journals).

Comprising the Names of Companies, District or County  
of Location; Amount and date of Assessment; Date of  
Meeting; Day of Delinquent Sale; and Amount and Time  
of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DELINQUENT. OF SALE	DAY	DAY
Abernethy, Virginia, Nev., March 23, \$5.	April 25—May 27	Adella, Sierra Co., Cal., April 9, \$200.	May 9—May 27
Arizona Cons., Arizona Terr., Annual Meeting, May 6.		Big Blue Lead, Kern Co., Cal., Feb. 19, \$5.	April 2—May 22
Becher, Virginia, Nev., March 23, \$12.	April 25—May 27	Becher M. Co., Nev., March 23, \$5.	April 25—May 27
Baldwin, Vir., Nev., March 23, \$3.	April 25—May 27	Batopilas, Chihuahua, Mex., April 11, \$2.	May 16—June 3
Cosala, Sinaloa, Mex., Feb. 12, \$1.	April 18—May 7	Camargo, Lander Co., Nev., Feb. 14, \$20.	Mar 23—May 21
Cardinalito, Del Norte Co., Cal., March 16.	May 4—June 14	Chico, Humboldt Co., Nev., April 20, \$100.	June 1—June 19
Dancy, Lyon Co., Nev., April 25, \$50.	June 3—June 17	Eureka Cons. Co., Del Norte Co., Annual Meeting, May 23.	
Eureka Coal M., Alameda Co., Feb. 7, \$5.	April 8—May 2	Eureka Coal M., Alameda Co., Meeting, May 4.	
Empire M. & M., Nev., dividend \$10.	Payable March 15	El Tasto, Sonora, Mex., Feb. 12, \$1.	April 13—May 1
Forest Springs, Grass Valley, Cal., Feb. 13, \$40.	Apr 13—Apr 30	Franko-Americana, L. C., April 22, \$20.	May 21—June 4
Golden Rule, Tuolumne Co., div. 50¢ 2 sh.	Payable May 14	Gravel, Nevada, April 15, \$1.	April 23—May 10
Gravel, Nevada, April 15, \$1.	April 23—May 10	Gould & Curry, Virginia, Nev., dividend \$30.	Payable Jan 8
Gold Quarry, Placer Co., Feb. 21, \$30.	April 12—May 13	Gould, Washington, Alpine Co., April 5, \$5.	May 11—June 3
Go. Washington, Alpine Co., April 5, \$5.	May 11—June 3	Go. Washington, Alpine Co., April 5, \$5.	May 11—June 3
Hono Gravel, Nev. Co., April 15, \$1.	May 22—June 11	Imperial, Virginia, Nev., div. \$125.	Payable April 15
Imperial, Virginia, Nev., div. \$125.	Payable April 15	Independence, Sierra Buttes, Cal., Ann. Meeting May 6.	
Independence, Sierra Buttes, Cal., Ann. Meeting May 6.		L. & L., Alpine Co., Cal., April 25, \$5.	May 25—June 10
Julia, Storey Co., Nev., Feb. 14, \$1.	April 12—May 8	Kentucky, div. \$150.	April 23—May 20
Kentucky, div. \$150.	April 23—May 20	Keley O. & S., El Dorado Co., April 15, \$5.	May 18—June 15
Keley O. & S., El Dorado Co., April 15, \$5.	May 18—June 15	Lyon M. & M. Co., El Dorado Co., Apr. 3, \$2.	May 4—May 18
Lyon M. & M. Co., El Dorado Co., Apr. 3, \$2.	May 4—May 18	London Quartz Mining Co., Special Meeting, May 4.	
London Quartz Mining Co., Special Meeting, May 4.		La Brea, Sonora, Mex., April 23, \$2 50.	May 25—June 10
La Brea, Sonora, Mex., April 23, \$2 50.	May 25—June 10	North Star, Lander Co., Nev., Feb. 14, \$5.	April 24—May 15
North Star, Lander Co., Nev., Feb. 14, \$5.	April 24—May 15	Nuestra Señora de Guadalupe, Feb. 15, \$1.	April 17—May 16
Nuestra Señora de Guadalupe, Feb. 15, \$1.	April 17—May 16	New Idria M., Annual Meeting, April 20.	
New Idria M., Annual Meeting, April 20.		Overman, Storey Co., Nev., Feb. 12, \$10.	April 18—May 4
Overman, Storey Co., Nev., Feb. 12, \$10.	April 18—May 4	Patrocina & Dolores, Mex., Feb. 1, \$3.	Mar 5—Mar 22
Patrocina & Dolores, Mex., Feb. 1, \$3.	Mar 5—Mar 22	Peninsula, L. C., April 23, \$5.	June 1—June 15
Peninsula, L. C., April 23, \$5.	June 1—June 15	Pr. of the West, Silver City, Nev., Special Meet. Apr. 27.	
Pr. of the West, Silver City, Nev., Special Meet. Apr. 27.		Rattlesnake, Yuba Co., March 22, \$1.	April 26—May 11
Rattlesnake, Yuba Co., March 22, \$1.	April 26—May 11	Rippon, Alpine Co., Cal., Annual Meeting, May 27.	
Rippon, Alpine Co., Cal., Annual Meeting, May 27.		Rippon, Alpine Co., Cal., April 22, \$3.	May 27—June 17
Rippon, Alpine Co., Cal., April 22, \$3.	May 27—June 17	Santa Cruz, Santa Cruz Co., Feb. 9, \$50.	April 13—April 30
Santa Cruz, Santa Cruz Co., Feb. 9, \$50.	April 13—April 30	Shoshone S. M., dividend, \$2 per share.	Payable March 14
Shoshone S. M., dividend, \$2 per share.	Payable March 14	Savage, Virginia, Nev., dividend \$100.	Payable March 8
Savage, Virginia, Nev., dividend \$100.	Payable March 8	Smoky Valley, dividend.	Payable Feb 1
Smoky Valley, dividend.	Payable Feb 1	Santiago, Silver City, dividend.	Payable March 6
Santiago, Silver City, dividend.	Payable March 6	Sierra, Douglas Co., Nev., March 22, \$2 50.	April 27—May 14
Sierra, Douglas Co., Nev., March 22, \$2 50.	April 27—May 14	Sierra Nevada, Storey Co., Nev., Apr. 10, \$5.	May 14—May 30
Sierra Nevada, Storey Co., Nev., Apr. 10, \$5.	May 14—May 30	Salsamander, Calaveras Co., Cal., Annual Meeting, May 2.	
Salsamander, Calaveras Co., Cal., Annual Meeting, May 2.		Tellurium, Amador Co., Cal., Feb. 9, \$1.	April 13—April 29
Tellurium, Amador Co., Cal., Feb. 9, \$1.	April 13—April 29	Tuolumne Mt. Tuol. Co., Cal., Apr. 18, \$1.	May 20—June 4
Tuolumne Mt. Tuol. Co., Cal., Apr. 18, \$1.	May 20—June 4	Tuolumne Mountain, Tuol. Co., Cal., Special Meeting, May 4.	
Tuolumne Mountain, Tuol. Co., Cal., Special Meeting, May 4.		Union Cop., Calaveras Co., Apr. 19, 50 cts.	May 20—June 10
Union Cop., Calaveras Co., Apr. 19, 50 cts.	May 20—June 10	Whitaker, Lander Co., Nev., Feb. 14, \$15.	Mar 29—May 21
Whitaker, Lander Co., Nev., Feb. 14, \$15.	Mar 29—May 21	Yellow Jacket, Gold Hill, div. \$50 sh.	Payable Jan 15
Yellow Jacket, Gold Hill, div. \$50 sh.	Payable Jan 15	Yosemite, Lander Co., Nev., April 11, \$50.	May 15—June 3

\*Those marked with an asterisk (\*) are advertised in this  
journal.

C. T. MEADER has not failed. The sus-  
pension was for a few days only. The house  
has been in full operation for the past two  
weeks. So says the Stockton Independent.

HEAVY FORGING.—The Park Head forge,  
in Scotland, has two seven-ton hammers.  
At this establishment was forged the stern  
frame of the Achilles, weighing forty tons,  
and a crank shaft which weighed thirty-two  
tons.

## San Francisco Mariners' Church.

Among the noble acts accomplished by  
the citizens of San Francisco during the  
past year, we should not fail to mention the  
erection of the beautiful structure, a spirited  
picture of which we herewith present. From  
a graceful tower and flagstaff, rising far  
up above the surrounding buildings, may  
now be seen that familiar blue flag with its  
emblazoned letters, indicating to the mariner  
all along the City Front, where he may find  
a temple in which to worship God, free to  
all of his calling; and where he will find



friends who will take him heartily by the  
hand, point out to him the way of salvation,  
and stand by him at all times and upon all  
days, to save him from temptation and from  
the evil machinations of those who ever  
stand in wait to prey upon sailors and filch  
from their hard-earned gains.

The structure which the generosity of our  
citizens has erected for the benefit of the  
sailors, resident in and visiting this city,  
is located at the corner of Sacramento and  
Drumm streets, has been built at a cost of  
about \$20,000; fourteen thousand of which  
has already been raised and paid over, leav-  
ing an indebtedness of \$6,000. The house  
is 89½ by 50 feet in size, and will accom-  
modate upwards of 400 people. The spire  
is 125 feet high. The architects were S. C.  
Bugbee & Son. The lower story on Drumm  
street is occupied for stores; the Sacramento  
street front is leased by the Board of Edu-  
cation for school purposes. This portion  
of the building will be converted into a  
sailor's reading room as soon as the rents  
and subscriptions have paid off the indebt-  
edness.

The efforts now being made to reclaim and  
elevate the tenants of the forecastle, is one of  
the most important benevolent works of the  
age; and it is gratifying to every philan-  
thropist to learn that San Francisco intends  
to take the lead in this, as she has already  
done in every other work of humanity.  
Clearly it is the duty of the merchants of

every seaport to provide both a temporal  
and spiritual home for the sailor, who too  
often braves the dangers of the deep, in  
navigating their ships across ocean wastes,  
only to meet still greater dangers from the  
land sharks which lie in wait to rob him  
of his hard earnings as soon as he arrives  
in port. We are pleased to learn that both  
are within his reach when he arrives in San  
Francisco, and that the true friends of the  
sailor here are doing a good work, and he-  
ing abundantly blessed in their labors.

## Marquis' Patent Slop Hopper.

We give herewith an illustration of a very  
useful California invention, designed as a  
trap for drains, sinks, cesspools, etc. By  
means of an inside receiver or strainer, the  
waste refuse materials, which so often choke  
up and render useless the common hopper,  
is prevented from entering the conduct  
pipe, and may be readily removed as often  
as occasion requires. This device is dis-  
tinctly shown in the engraving, with its  
perforated sides and bottom, by which the  
liquid is drained off. Underneath this re-  
ceiver is placed a movable, inverted pan,  
standing on legs, and shutting down over  
the exit pipe, which, by protruding upwards  
into the chamber below the receiver, forms  
a trap which effectually prevents the escape  
upwards of any gaseous generations in the  
drain or cesspool. Such a device as this is  
just the thing for which it is intended, and  
just what every owner of a dwelling should  
be compelled to put upon his drain-way,  
where niggardness or lack of interest in the  
general welfare fails to prompt him to a



proper regard for his own or the health of  
his neighbors. Samples of this hopper can  
be seen at most of the plumbers throughout  
the city, and at the office of the inventor,  
323 Montgomery street.

The inventor claims, 1st, the construction  
and arrangement of the stationary hopper,  
and movable hopper, substantially as de-  
scribed and for the purpose set forth.

2d, The bowl or pan, or its equivalent,  
placed upon standards in the bottom of the  
lower ledge in the outer hopper, or attached  
to the inner hopper, and which forms, to-  
gether with the lower portion of the movable  
hopper and the upper portion of the con-  
nection pipe, and the trap, substantially as  
described and for the purpose set forth.

## Contributed for Our Cabinet.

Peter Brandon, superintendent of the  
Yosemite mining company, Santa Fe Dis-  
trict, Lander county, (Smoky Valley) Ne-  
vada, has contributed for our Cabinet  
several specimens of very rich silver ore  
from the Yosemite No. 1, Yosemite No. 2,  
and the Troy mines, all belonging to the  
Yosemite mining company.

147 and 148—From Yosemite No. 1, con-  
tain black sulphurets and chloride, highly  
colored with green carbonate of copper. A  
face 20 feet high has been opened upon this  
ledge, and a tunnel commenced. Assays of  
fair averages of assorted ore from the out-  
crop are said to yield at the rate of from  
\$290 to \$600 to the ton.

149 and 150—Are from Yosemite No. 2,  
upon which an incline has been sunk 58  
feet, developing a 9-foot ledge. These spec-  
imens are similar to Nos. 147 and 148; but  
more quartzose in character. A pulp assay  
of a test lot of ore from this mine, reduced  
by mill process, gave \$200 to the ton, which  
lot was subsequently worked to within 20  
per cent. of assay. This ore is very easily  
reduced, and the precious metals may be  
separated without difficulty.

150 and 151 are from the Troy mine, in  
the same neighborhood and belonging to  
the same company. This mine has not yet  
been prospected, although the specimens  
before us bear a close resemblance to Nos.  
149 and 150. Immediate steps are to be  
taken for the development of this property.  
There is a mill six miles distant, where a  
sufficient amount of rock will be worked to  
prove the value of the mines. If the result  
is as favorable as expected, arrangements  
will be made to put up a mill forthwith.

152 and 153.—Homer Holland sends us  
two specimens of ore from the Badger mine,  
El Dorado county, recently discovered and  
as yet unprospected. Both specimens are  
heavily charged with sulphurets, a large  
portion of which appear in regularly formed  
cubical crystals. The specimens are inter-  
seamed with irregular but well-defined  
seams of white quartz, entirely free from  
any admixture of foreign substance. The  
gangue of one of the specimens, which we  
have numbered 153, is of a dark slaty char-  
acter; the other (152) is much lighter in  
color, talcose, and composed chiefly of  
silica. The sulphurets have very much the  
resemblance of the rich auriferous sulphu-  
rets of Nevada county, and doubtless con-  
tain more or less gold. Their value can  
only be ascertained by assay. The first  
work done on such a mine should be to as-  
certain, definitely, the character of the sul-  
phurets.

COMMUNICATIONS RECEIVED.—"Southeast-  
ern Nevada," from "J. D. E.," "A. C. D."  
in reply to "Machinist" on the "Gravity  
Question;" also clippings, etc., from "C.  
D. V.," Iowa Hill.

A CABINET.—Mr. Robert White, of El  
Dorado county, intends to take his cabinet  
of 2,000 specimens of California minerals  
and curiosities to Europe. He will also  
lecture on California.



## Report of the Mechanics' Institute on the Sutro Tunnel.

Messrs. Wm. J. Lewis, Arch'd Cooper and P. M. Randall, a special committee appointed by the "Mechanics' Institute of San Francisco" to investigate the Sutro Tunnel project for draining the mines on the Comstock lode, in the State of Nevada, submitted the accompanying report, which was unanimously adopted at the regular meeting of the Association, April 4th, 1867. It contains much information which we deem important to place on record in our files:

### DISCOVERY OF SILVER IN NEVADA.

In June, 1859, Peter O'Reilly and Patrick McLaughlin, while engaged in gold washing on a spot which is now the property of the Ophir Company, discovered a heavy black substance, which, upon examination, was found to contain sulphurets of silver of the highest value.

It was ascertained that this substance was a portion of the vast deposit of silver and gold-bearing ore now known as the Comstock lode, so called from a miner named Comstock interested in the first purchase of the adjoining ground.

An excitement unparalleled since the first discovery of gold in California followed; speculators and miners from California crossed the Sierra Nevada Mountains, and rushed to the new mines. Locations were made for miles on the supposed course of the lode, and the flourishing towns of Virginia City and Gold Hill sprung up; the former named after one James Finney, a native of the State of Virginia, who was known among his fellows by the sobriquet of "Old Virginia."

Under rules formed by the miners, similar to those long in use in California, each miner was allowed to locate 200 feet on the length of the lode. These locations were afterwards transferred to companies, and comprises the ground now belonging to the Ophir, Mexican, Gould & Curry, Savage, Hale & Norcross, Imperial, Yellow Jacket, Crown Point, and many other companies not so well known.

### YIELD OF BULLION.

These mines have now a world-wide reputation; the yield of the precious metals from the Comstock lode far exceeds that of any other locality.

The annual produce for the past five years has been, in round numbers, as follows:

1862.....	\$ 4,000,000
1863.....	12,000,000
1864.....	16,000,000
1865.....	15,000,000
1866.....	35,000,000
Total produce in five years.....	\$63,000,000

The total annual production of silver in the world in 1854 is stated by Professor Whitney at \$47,443,200. The bullion obtained from the Comstock lode in 1866 is, therefore, equal to more than one-third in value of all the silver produced in 1854. Mexico, in its most flourishing days, from 1795 to 1810, produced an annual average of \$24,000,000 from several thousand mines. After 1810, when the Revolution took place, the yield of the mines fell in some years to as low a figure as \$4,500,000, but the average from 1810 to 1825 shows \$10,000,000. At the present time the entire product of Mexico does not exceed that of the Comstock lode.

The celebrated mines of Potosi averaged about \$4,000,000 per annum for 300 years; those on the Veta Madre (mother vein) of Guanajuato, about \$3,000,000 for an equal period, and the mines of the Real del Monte Company, on the Biscanya vein, in Mexico, over \$400,000 for the last 110 years, or a total of \$44,000,000—a less amount than has been obtained from the Comstock lode in the last three years.

### PROFITS IN MINING.

The immense yield of bullion from the Comstock lode will lead one to suppose that the profits realized by the owners have been proportional to the yield, but this has not been the case.

It is true that the value of bullion obtained by some companies has greatly exceeded the current expenses; as, for example, the Gould & Curry, the net profits of which amount to over \$3,000,000. But some other companies have expended large sums of money and realized little, and some nothing at all. We have no accurate figures for the earlier years; but, comparing the dividends with the assessments levied, we find that the aggregate produce of the mines has been swallowed up by expenses. In 1865, the dividends paid amount to \$1,900,000, and the assessments levied to \$1,950,000, or \$50,000 more than the dividends.

In 1866, the dividends paid were \$1,794,400; the assessments levied, \$1,232,380. Dividends over assessments, \$562,020. In the first years of operations on the Comstock lode, the expenditures for machinery, which had to be transported from California across the Sierra Nevada Mountains, for the erection of costly reduction works, and for other permanent improvements, together with the extravagant prices paid for reducing ores in a very imperfect manner, absorbed nearly the whole produce. Latterly, the only increase of expense has been in mining operations; as greater depths were reached, a large amount of prospecting or dead work had to be done, and additions made to the pumping and hoisting machinery, almost counterbalancing the reduction in the cost of crushing the ore, of labor, and of freight, and we consequently find that the aggregate profits of the mines at the end of the last year bear but a small ratio to the production.

The cost of labor and of reducing ores will gradually diminish from year to year, and on the completion of the Central Pacific Railroad from Sacramento to the valley of the Truckee river, which will certainly be effected in the year 1868, the price of transportation from San Francisco to the mines will not be more than one-third of the average rates heretofore paid. But we do not believe that any reduction of expenses on these items which can be made will be sufficient to meet the increased cost of working the mines after a few years, when greater depths are attained, if the present system of pumping out the water, and of raising the ore and refuse through shafts to the surface is continued.

In the late report of R. H. Stretch, Esq., State Mineralogist of Nevada, we find it stated that forty-seven steam engines are now in operation on the Comstock lode, which answer all the present requirements; but every addition to the depth demands additional power, correspondent augmentation of capital invested in machinery, and a larger annual demand for fuel. The little wood there was originally in the vicinity of Virginia City was long since exhausted; it has now to be obtained almost exclusively from the eastern slope of the Sierra Nevada Mountains, and as the nearer timber is destroyed, it must be hauled a greater distance and at an increased price.

If we take into consideration the cost of machinery, of annual additions and repairs, and of consumption of fuel, wages of employés, delays caused by breaking of pumps, expense of explorations, obstacles in securing good ventilation and increase of heat with the depth, and the financial result of past years, we are forced to the conclusion that the mode now adopted of working these mines cannot long be prosecuted with profit to the owners.

The result of similar operations in other countries, as furnished by Humboldt, Ward, St. Clair, Duport, and other writers, conveys an instructive lesson for persons interested in mining enterprises. These authorities agree that mining from the surface must always prove suicidal to the interests of the owners when the position of the mines will allow the construction of adits or tunnels, which will drain the water, ventilate the mines, and diminish the cost of removing the ore and valueless material.

Humboldt, in his "Assay Politique sur la Nouvelle Espagne," published in 1803, in reference to the Veta Madre of Guanajuato, a lode much resembling the Comstock, exclaims:

"It is, indeed, strange that mines of such richness have no tunnels for draining when the neighboring ravines of Cata and Marfil, and the plains of Tumascatio, which are below the level of the lowest works of the Valenciana mine, would seem to invite the miner to commence works which would serve for drainage and at the same time afford facilities for transporting materials to the smelting and amalgamation works."

A gentleman of intelligence, whom Humboldt questioned in regard to this want of wisdom, replied, "that the excavation of a general tunnel would be a work very expensive, and perhaps impossible, on account of the want of union among the proprietors of the different mines."

### THE VALENCIANA MINE.

Upon this lode is located the celebrated Valenciana mine, which, according to Humboldt, was first opened by Obregon, a young Spaniard, who, without means, commenced prospecting on a part of the vein which up to that time had been unproductive.

After undergoing many privations, he at last struck an immense body of ore, from which alone was extracted, from the first of January, 1787, to the 11th of June, 1791, the sum of \$14,764,492 of silver, out of 134,988 tons of ore. Señor Obregon, afterwards known as the Count of Valenciana, became the richest man in Mexico, and

probably in the world, at that time. As greater depths were attained, the increase of expense became such that the mine ceased to yield a profit, and before the breaking out of the revolution in 1810, it was allowed to fill with earth and water. In 1825, this mine, together with many others, fell into the hands of a wealthy English company, who expended twenty-one months in draining it of water; but the expenses of mining and pumping were so great that after some years the lower works were again abandoned.

### THE ENGLISH REAL DEL MONTE COMPANY.

The most remarkable and disastrous experience made by any foreign company in Mexico has been that of the English Real del Monte Company.

They became, in the year 1823, the possessors of the Biscanya and several other veins, the former having been worked for many years, and having yielded large amounts of silver, prior to 1749. At that date an intelligent miner, named Bustamante, concluded to run an adit, or tunnel, in order to effect their drainage. He labored long and patiently, and was supplied with means by Don Pedro Terreros, who continued the work after the decease of Bustamante. In 1759 the vein was reached, after running a tunnel 9,000 feet in length, cutting the vein at a depth of 600 feet beneath the surface, and exposing to view an immense body of ore. Terreros, in the twelve succeeding years, drew from his mines a clear profit of \$6,000,000; he obtained the title of Count of Regla by the munificence of his donations to the Court of Madrid; he presented Charles III. with two ships of the line (one of 112 guns, constructed at Havana of the most costly materials), and accommodated him besides with a loan of \$1,000,000, no part of which has been repaid.

His successor, the second Count, continued the working of the mines, but not with equal profit, for the upper portions of the vein being worked out, he was compelled to go below the adit, and the water encountered required 1,200 horses to pump it out, at an annual expense of \$250,000. After struggling for many years, and after a depth of 324 feet under the adit had been reached, the work was abandoned, and the mine allowed to fill with water.

It was in this state when the English Real del Monte Company took possession; they expected, by substituting powerful steam machinery for the horse whims which had been employed by the Mexicans, to make the mines again profitable. The result, however, was very disastrous, for in the 23 years they held the mines the expenditures were \$15,381,633; while the total yield was \$10,481,475, showing a loss of nearly \$5,000,000.

They first erected two steam engines of 36-inch cylinders each, which freed the mine from water to a depth of 324 feet under the adit; at this point another one was required and erected, of 54-inch cylinder, by which the working was carried to 724 feet under the adit; but here again the engines were overpowered, and still another engine of 75-inch cylinder was erected.

Mr. John Buchan, the Superintendent of the mine, in one of his reports, made in 1852, says:

"After the mine had reached a depth of 710 feet under the adit (1,310 feet below the surface), the difficulties of drainage had so increased, both from augmented quantity of water and the greater height to raise it to the point of discharge, that three powerful steam engines could barely stem the coming waters of the mine."

"With the increased difficulty of drainage, seeing three bunches of ore worked out, and a debt of \$5,000,000 still outstanding, it is not surprising that the energy and perseverance of the English adventurers were at last exhausted."

"Had the company prosecuted a projected deeper drain tunnel, it would have secured the continued prosperity of the mines for many years to come. It will be remembered that the first Count of Regla distinguished himself and made the fortune of his family by driving the present adit; the second Count reached down 324 feet below it, being the limit to which the mines could be worked with profit by horse-power drainage. The English Company, by the powerful aid of steam machinery, carried down the workings to 720 feet below the adit; but here we find another limit to profitable working, as the deeper excavations of the Biscanya vein are again abandoned to fill with water."

"A deeper adit, which had to be driven a distance of 13,500 feet, had been commenced by the second Count. The English Company, unfortunately, adopted the more speedy plan, as it was supposed, of employing steam engines, instead of the slower but surer plan of driving home the deep

adit, which could have been done with the investment of but little more capital than that expended in applying steam engines, and would no doubt have given a very different turn to the fortunes of that company."

Mr. W. P. Robertson thus relates the financial history of this company:

"The London Real del Monte Company commenced working on a magnificent scale; then, under the influence of a panic, suddenly deserted, in the most critical time, their judicious and indefatigable agent at the mine, and the result has been unmitigated ruin. The mania in London at the time (1823 to 1825) was so strong and so general that no expenditure was for a moment grudged. People thought they were laying out tens to receive back thousands; so they paid up their tens with surprising alacrity. The management in London of many of the new companies under the reaction was miserably bad, and, in the end, many of the shareholders were completely ruined and retired to cottages, there to abandon forever their 'Chateaux en Espagne.'"

"In 1825, the late Mr. Kinder, the enthusiastic leader of the Real del Monte Company, was offered \$8,000 for each of his 30 shares of \$500 paid up in that concern; he refused to sell—that is, he would not take \$240,000 for what had cost him \$15,000. The reaction set in, and down went all shares. In 1845-46, those of Real del Monte were to be had at \$12.50 each; that is, Mr. Kinder's thirty shares, which in 1825 were worth \$240,000, had gradually dwindled down to \$375! The company was all but bankrupt; no more assessments were listened to; and the debts could not be paid with unsaleable engines, though they kept up their steam, nor yet with stones, although silver was in them. The shares have since gone to nil; no one will have them, fenced in as they are with unknown responsibilities and debts. In vain did their new, active, intelligent and enterprising, though prudent manager and agent, Mr. Buchan, write to the shareholders to take heart and not to throw away their property. They had been panic-stricken in the first instance, they had got sick of the business in the second, and in this last and most helpless fit, they entered into negotiations for the sale of the property to a Mexican Company. A bargain was struck, and the perpetual lease of Real del Monte, with everything on it, passed from the hands of the Real del Monte bond-holders for an old song. The entire sum paid was \$130,000 for a business on which \$7,000,000 had first and last been expended, and even of the mite to be recovered, three-fourths were not to go into the hands of the bond-holders at all, but to be appropriated in Real del Monte itself, in the liquidation of sums still due to the servants of the old company. What a winding up! Shares once worth \$8,000 each, now not worth thirty cents! and the actual movable property on the estate, in houses, workshops, machinery, crushing establishment, timber, wood, iron implements, utensils, steam engines, horses, horned cattle, mules, and many valuable miscellaneous materials, must be worth altogether some millions of dollars. The house of Regla alone cost a million and a half, and now is valued at a million of dollars—all gone for \$130,000!"

"Thus did Real del Monte pass from the Counts of Regla in Mexico, and thus has it passed from the luckless shareholders in London—the first paying the penalty of personal extravagance, the other an equally severe one of wild speculation and injudicious management. It is now in wiser hands than theirs, and prosperity dawn again on this almost national establishment or colony."

This history of the Real del Monte mine teaches a valuable lesson, confirmed by the result of almost every similar enterprise in Mexico. They show that after a certain depth has been reached, and no drain tunnels constructed, the mines have been abandoned and the proprietors ruined.

St. Clair Duport, who published a work on the mines of Mexico in 1843, gives a general sketch of mining operations, which is a perfect representation of recent experiences in California and Nevada. He says:

### "OPENING A MINE"

By accident, somebody discovers, guided by the croppings elevated above the soil, quartz containing some metal. He exposes some pieces to white heat, and if he discovers thereon globules, or pearls of silver, he takes up the claim. The discoverer now seeks partners with capital to work his claim, as generally the means of one man are not sufficient for such an enterprise. At first they generally seek to extract the ore by following down on the vein, and open a number of shafts along its course; but in the same ratio as these shafts increase in



depth the water increases too; galleries and new shafts become necessary, and finally, as is generally the case when the largest portion of the yield has been expended in such operations, particularly in mines which are not extraordinarily rich in minerals, the work has to stop on account of bad air and abundance of water, the improvements being of no further use.

"The owners now look for new partners; if the vein presents probabilities of richness at a greater depth, persons can be found who, for a portion of the stock, generally for half, advance the necessary means which is to be repaid out of the first yield of the mine.

"After the water has been removed, and the shafts and galleries are made, and really rich ore is found, then commences the good time of the mine. Arrived at a depth where silver generally is abundant, and when the expenses to bring the water and ore to the surface are not too great, mining is a good paying business; that is what is called in the miner's language 'labonanza.' This time is hoped for with ardent desire, not only by the owners of the mine, and the miners employed, but also by the entire neighborhood. In this case labor, and all necessary articles for mining, are in demand, and well paid for; the money earned with ease is spent freely, and everybody in the whole mining region having any claims is full of hopes to strike it equally rich. The buildings for the reduction of ores are now erected, and very often in a style altogether too costly for their use. Next underground works are constructed to facilitate the hoisting of ore and water. In case the mines in 'boanza' belong to private individuals, these works are executed on a substantial basis, with a view of usefulness for the future. But in most cases, when a mine is divided amongst a number of shareholders, they present such a diversity of ideas that they often cannot agree upon anything at all, except to extract the most money from their mine in the shortest time possible, without even looking ahead for a few months. For this reason we cannot find one single well-worked gallery in such mines. The richest ore is torn from the mine, and less rich ore remains untouched, to be taken out when 'labonanza' ceases. It is difficult to understand why in times of prosperity a small portion of the yield is not spent to make new developments.

#### ABANDONMENT OF THE MINE.

"The pay streak once traversed, and the increased depth rendering the price of extraction too considerable, the 'bonanza' ceases. The less rich ore left in the mine is now taken out, and one of the greatest expenses being the keeping down of the water, the lower qualities of ore are abandoned.

"The reserved middle class of ores will pay expenses to explore the mine for a while, but the time arrives when a day's work, or the value of a pound of ore, ceases to pay, and the mine is thereafter entirely abandoned.

The author of the above description of mining operations in Mexico, written twenty-five years ago, could not have given a more truthful account of operations in the Comstock lode had he spent the last six or seven years in Virginia City. Our mining companies have been pursuing exactly the same course, and have followed in the footsteps of their Mexican predecessors. Ruin of the owners and abandonment of the mines has been the result there; ruin and abandonment must follow upon the suicidal course pursued here.

#### MINING IN EUROPE.

If we turn to Europe, however, we find that mining is carried on with intelligence, economy, and with a view to permanency. In England but few mines are located at any considerable elevation above sea level, and deep drainage by adits is impossible. But each mine has its adit, however small its depth may be beneath the surface, and in stating the depth of shafts in England they are given from the adit downwards; what is above the adit is not counted at all.

The most remarkable work of this kind in Great Britain is the great adit in Cornwall, of which an English writer says:

"The advantages of working mines by adits are well shown at the United mines, near Redruth, where an adit has been driven, commencing only a few feet above the sea level, which, with its branches, has a length of from thirty to forty miles, and a depth under the mines of from 180 to 420 feet. By means of this work a saving in the consumption of coal is effected amounting to 24,000 tons per annum. This magnificent undertaking was completed in 1768."

#### MINES IN GERMANY.

The mines in Germany present by far the finest field for studying mining operations reduced to a science. There mining schools and learned professors have for years prepared young men, who were to be placed in charge of mines, with a thorough knowledge

of all the varied branches required of mining engineers. It is owing quite as much to intelligent management as to the low rate of wages that mines are profitably worked in Germany which would be considered valueless in California or Nevada. There we see the most complete systems of drainage and ventilation, and mines placed beyond the usual contingencies of such enterprises, yielding nearly uniform dividends, and regarded by capitalists as good security for investment.

#### THE FREIBERG DISTRICT.

A few years since it was proposed to drain the Freiberg mining district by an adit-level of the extraordinary length of twenty-four miles, which would cut the vein at a mean depth of 2,000 feet. This plan was vigorously supported by Von Beust and other eminent mining engineers, and received the sanction of the Saxon Government. This gigantic work has not yet been commenced, but a deep adit is now being driven, which will drain the mines 400 feet below the present deepest natural drainage and will have a length of a little over eight miles. It is eight feet wide, nearly ten feet high, and rises in the whole distance twelve feet six inches.

In the Harz district some mines have attained an immense depth. The mine of Andreasberg has a depth of 2,450 feet, being one of the deepest mines in the world; adits have been run there for centuries, the largest of which was completed three years ago.

#### THE ERNST AUGUST TUNNEL.

We make the following condensed extracts from a report made by Dr. Geissler concerning this great work, called the Ernst August Tunnel, after the late King of Hanover:

"On the 22d of June, 1864, a drain tunnel was completed which may be called the greatest work of the kind ever executed. To explain its objects and importance it will be necessary to give the following details:

"The mines of the Harz were about to be abandoned, or, more properly speaking, about to be drowned out by water beyond redemption. In the course of time the explorations in those mines went deeper and deeper, until they reached a depth of 2,000 feet. While the higher situated galleries ceased to yield pay ore in sufficient quantity, the exceedingly rich ores discovered in the lowest levels could not be reached on account of great hodies of water, which pumps and engines could not master, and the lower levels had to be, for the time being, abandoned.

"There have been drain tunnels in the Harz for a long time, which were used as canals for the transportation of ores. Already at the commencement of the sixteenth century mechanical means to remove the water from the mines were insufficient, and drain tunnels were constructed at that early period. The first tunnel was commenced in 1525, another in 1548, one in 1551, and still another in 1573. By aid of these tunnels mining was continued in those districts for 200 years, but about the middle of the last century it became difficult again to master the water.

"In 1799 another deep tunnel—having a length, including galleries, of 57,000 feet, or nearly eleven miles—was completed. But this also, afterwards, was considered insufficient for future purposes, for notwithstanding additional engines might have been used for a while, their dimensions and cost in mines which had reached such an enormous depth would have been very great. And, after all, the surest and cheapest way for water to be removed is by its natural flow; the engines have enough to do in pumping the water up to the Ernst August Tunnel, as that gives the deepest natural drainage which can ever be obtained.

#### DESCRIPTION OF TUNNEL.

"In 1850, after careful surveys and due consideration, the construction of the Ernst August Tunnel was resolved upon; it was to commence at Gittelde, a little town at the foot of the Harz Mountains, and it was estimated that twenty-two years would be required for its completion, but it only took a little over half that time, for it was entirely completed in twelve years and eleven months. Nine shafts had been sunk, from which eighteen galleries or drifts were run, and one from the mouth, so that the work progressed from nineteen different points. The connections were made with such perfection that they could not be recognized after they were completed.

"This tunnel has a uniform fall of 5-4 10 inches to each 630 feet, or 1 in 1,400; its height is 8 feet 3 inches; its width, 5 feet 6 inches, and its shape that of an egg. The water has a sufficient depth to allow the use of long flat-boats, for the transportation of ore. A part of the water course is covered over, to be used as a sidewalk for the miners."

#### NECESSITY OF A TUNNEL TO THE COMSTOCK LODGE.

We have thus far reviewed the results of mining experience where drain tunnels have not been, and where they have been constructed, and the conclusion your committee arrives at is, that a deep drain tunnel to the Comstock lode will not only greatly facilitate mining operations, but it is an absolute necessity; the sooner it is constructed the more benefit will be derived therefrom, and without it nothing is more certain than the abandonment of those mines before the lapse of many years.

The necessity of the tunnel having been sufficiently demonstrated, it remains to show that the ore which will probably be obtained from these mines will justify the cost of construction.

The first question to be examined is, whether the ore in the Comstock lode extends to an unlimited depth. This question has been so ably handled by Baron Richtofen, an eminent geologist of the highest European reputation, that we content ourselves by giving some extracts from a letter written by him upon this subject, in February, 1865, and published in one of the pamphlets issued by the Suto Tunnel Company. For a more detailed account of the geology of the Washoe country we refer to his able report, to be seen on the tables of this Institute.

#### CONTINUITY OF THE COMSTOCK LODGE.

The learned Baron says: "The value of a deep tunnel will, of course, chiefly depend upon the question whether these mines will ever be worked to considerable depth; that is, whether the Comstock vein will extend far down, and whether it will retain its metalliferous character in depth. Both questions will have to be decided from the study of the structure and nature of the Comstock vein, and from comparing the results with the observations at such mines in other countries which have already been worked to great depth. My experience on the Comstock vein is based on close and repeated examinations of nearly all the mines on its course. I believe I concur with almost everybody who has had equal experience about them, in the opinion that it is a true fissure vein, of extraordinary length, and extending downward much further than any mining works will ever be able to be carried on. It would be too lengthy to enumerate the various reasons which lead most positively to this conclusion. It is now assumed almost universally as a fact, and the number of those who consider it as a gash vein, or a system of gash veins, is fast diminishing.

"As to the downward continuance of the ore-bearing character, every instance goes to show that the average yield in precious metals remains about the same at every depth. Some mines had accumulations of ore near the surface (Ophir, Mexican, Gold Hill); in others, they commenced very near under the surface (Gould & Curry, Potosi, Yellow Jacket, Belcher); at others, again, considerable work had to be done before hodies of ore of any amount were struck (Chollar, the southern part of Gold Hill, Uncle Sam, and others), and some which had no ore heretofore, appear to have good prospects to find it soon. The fact that some rich hodies of ore, which were found near the surface, gave out at a depth of a few hundred feet, induced the common belief that the Comstock vein was becoming poorer in its lower parts. But the explorations of the last few months have entirely defeated this opinion. On the contrary, the enormous amount of bullion which is being produced by the mines at present may almost appear to prove that the vein is improving in depth. But this conclusion is probably equally fallacious, as it must be borne in mind that many mines have been developed at different levels, and ore is being extracted from several of those. Hoisting works and the mode of extracting the ore have also been improved, and of course help to increase the daily produce. This average equality of the produce of the vein at different levels is not only true for the amount of ore extracted, but also for its yield. The rich body of ore in the Ophir and Mexican mines forms the only exception to this rule, as none of equal average percentage in silver and gold has been found again. Even the relative proportion of gold and silver in the ore has not undergone any material change, though the bullion, on account of the more imperfect process of reduction, contained at first proportionately more gold than at present.

"There is no reason to doubt that the equality of the average produce and yield throughout the entire length of the vein will continue downward to any depth. Besides the very obvious theoretical conclusion, that vast amounts of silver could not be carried into the fissure from the overlying or enclosing rocks, but naturally had to rise from unknown depths, through the

channel of the fissure itself, to be deposited in it where the conditions for sublimation or precipitation were given in its open space; experience in other countries by no means shows of a regular decrease or an increase in yield as of common occurrence, though either of them may happen. More commonly, the produce of true fissure veins in precious metals has been found to be about constant."

The Baron wrote the above over two years ago. The explorations made since that time in the Hale & Norcross and other mines, strongly confirm the views expressed by him.

Nearly all writers who have specially studied the question of the continuance of mineral veins in depth, have arrived at the same conclusion. We will give an extract upon this subject from an eminent French writer, Mr. Burat. He says:

"In all countries where isolated veins are worked, a large number of them have been abandoned and taken up again; abandoned because accidents or barren streaks rendered the working burdensome; and afterwards taken up again, when they have, by the aid of capital, been made productive mines. The same veins have been declared to be rich or exhausted, for these reasons, at different times; exhausted always when the owners were discouraged, and rich after the execution of further works had pierced the barren places. These are the facts, of which we will relate several examples, and by which we intend to prove that each reworking of a vein after an abandonment more or less long, bears witness of the continuity of mineral veins in depth."

Burat and other prominent writers recite numerous instances of this kind, but we cannot give place to them in this report:

#### THE SUTRO TUNNEL.

The proposed tunnel begins 3½ miles below Dayton, between Corral and Wehher Cañons. The distance from the mouth of the tunnel to the Savage works is a little over four miles, but as the Comstock lode dips to the east, it will be cut in 20,178 feet. It will pass through the different ledges in Silver Star and other districts nearly at right angles. Allowing a grade of one inch in 100 feet, or four and four-tenths feet per mile, it will be 1,922 feet below the floor of the Savage works. The topography of the country is admirably adapted for sinking shafts, four of which are proposed to be put down. They will not only supply the tunnel with fresh air, but will greatly expedite work, as drifts can be run each way after reaching the grade of the tunnel. The distance of the first shaft from the mouth of the tunnel is 4,070 feet—depth, 443 feet; second shaft from first, 5,150 feet—depth, 980 feet; third shaft from second, 4,060 feet—depth, 1,436 feet; fourth shaft from third, 4,654 feet—depth, 1,360 feet; from fourth shaft to Comstock Lode, 2,244 feet—depth, 1,942 feet. These are convenient distances for working and ventilation. The mouth is about one and a half miles from Carson River, and 150 feet above high water mark. There is a gradual descent for about one-third of a mile, in which a fall of 100 feet is obtained, giving sufficient area for dumping and mill-sites.

The vertical section of the tunnel through rock not requiring any support is a circle of twelve feet diameter, with offsets 3½ feet from the bottom, about one foot wide, which support the superstructure of the railroad track to be used for removing ore and debris from the mine. The space under the superstructure is for drawing the water from the lode. Where timber supports are required to sustain the adjacent rock, the top is level, and ten feet wide, clear of the framing; eight feet to the bottom of the timbers supporting the railroad, where it is twelve feet wide in the clear. Below this there is a triangular space, three feet seven inches in depth, forming the water way.

The estimates of the cost of construction have been very ably discussed in a lengthy report by R. G. Carlyle, Esq., covering some 200 pages of manuscript and illustrated by numerous well-executed diagrams. Mr. Carlyle has resided some years in Virginia City, when he was the Engineer of the Gould & Curry company, and appears to be perfectly familiar with everything connected with mining in that country. The minuteness with which he goes into the details of the proposed work, the elaborate calculations into which he enters, and the scrupulous manner in which he weighs his conclusions, entitle his report to careful consideration.

It is impossible for us to give more than a condensed abstract of the results he has obtained. The basis of his calculations is the experience of himself and others in mining near Virginia City, and the statements of Baron Richtofen in regard to the character of the material encountered in the



construction of the tunnel. The Baron says:

"The facilities of excavating the tunnel would depend mainly upon the quality of the rock through which it will pass. It is a remarkably fortunate coincidence that the route selected by Mr. Sutro not only gives the greatest depth, is the shortest, has the best facilities for working shafts, but promises also in this respect to be the most advantageous. The first 600 or 700 feet will be through trachyte and trachytic breccia, which, in a broad semicircular belt of prominent hills, swing from Dayton by the Sugarloaf, to Washoe Valley. Trachytic breccia may easily be worked by the pick, yet is ordinarily solid and dry enough to require no timbering. An idea of its excellent qualities for tunneling may be formed from the fact that in Hungary wine cellars hundreds of feet in length are with preference excavated in this kind of rock. The solid trachyte is an excellent blasting rock. Its superior qualities have caused its general use in Washoe for building material; it was as such applied in the construction of the solid masonry of the Gould & Curry mill. With the use of the drilling machine of Mount Ceniz, speedy work will be made in this rock. The next 2,500 feet will, to all probability, exhibit a great variety of rock, some of which will be rather hard. The following 10,000 feet to the cutting of the vein will most likely consist of the same material as is traversed by the numerous tunnels which lead at present to the Comstock vein. This rock (trachytic greenstone) would offer some obstacles if it were in an undecomposed state. But from the general nature of its decomposition, which evidently was performed from below by ascending steams and vapors during a time of volcanic action, we believe we are justified in the conclusion that it will be found for the entire length of 10,000 feet of the same rotten nature as in the shallow tunnels at present in existence, and it may have to be timbered the whole distance."

Mr. Carlyle speaks as follows in regard to his experience with the two principal kinds of rock to be encountered:

"While I was in the employ of the Gould & Curry as their Chief Engineer, we used solid trachyte for building purposes, taken from a quarry on the side of the Sugarloaf Mountain. I had, therefore, considerable opportunity of learning the particular characteristics of the stone. It is not porous, but is very close in its nature, has very few seams, no grains or special tendency to fracture in any particular direction. It is rather soft, and, in consequence, is easily drilled to any desired shape. The rock drills well and blasts freely, as it does not seem to have much cohesion on account of its many component parts. The rock does not air-slack; on the contrary, it grows harder by exposure."

This rock is extensively used for building purposes; all the stone buildings in the town of Dayton are constructed of it.

His experience in working greenstone porphyry he gives as follows:

"This class of rock is traversed by several tunnels to the Comstock lode, all of which were easily worked, and they had to be supported by timber. The Gould & Curry lower tunnel is the only exception to this, as it passed through 1,400 feet of undecomposed rock which was not difficult to work on account of its favorable stratification; powder was used but to a small extent, and this for the purpose only of shaking the mass. The remaining 800 feet to the lode had to be timbered, as the rock would not support itself. The whole length of this tunnel, 2,200 feet, was run from one working point in 486 working days, or sixteen months; the work, however, was distributed over a period of two years, as it did not progress steadily. The average daily progress was nearly five feet."

Mr. Carlyle estimates that 10,535 lineal feet of tunnel will be through solid rock, and 9,643 through decomposed rock, requiring timbering.

Shaft No. 1 is 7½ feet by 13½ feet, and shafts Nos. 2, 3 and 4 are 7½ feet by 14 feet outside of planking. They are timbered and planked from top to bottom, and divided into two compartments—one for pumping out the water, and the other for raising the excavated material.

Preliminary tunnels are driven from the bottom of these shafts in both directions till they meet. These tunnels are in solid rock, five feet in width and seven feet high, the top being a semicircle. In rock requiring timbering they are of a box shape, four feet wide on top, five feet on bottom, and six feet four inches inside of the timbering, with a channel below for drainage.

#### TIME REQUIRED TO FINISH TUNNEL.

"The time required to sink the different shafts on the Sutro Tunnel and make connections of the drifts from the same, I esti-

mate as follows on the basis that four feet can be sunk per day on the shafts, and five feet made on the drifts:

Connection from drift No. 1 in 462 working days.  
Connection from drift No. 2 in 693 working days.  
Connection from drift No. 3 in 705 working days.  
Connection from drift No. 4 in 815 working days.

"Since all these shafts would be progressing at the same time, the connections from shafts Nos. 1, 2 and 3 will be made before those of No. 4, and the whole time, therefore, required to finish a preliminary tunnel to the Comstock lode would be 815 days.

"The enlargement of this preliminary tunnel will progress from the mouth from time to time as the excavations are made, and will be completed up to a point midway between shafts 3 and 4 by the time the last connection is finished. From that point 4,618 feet would still remain to be enlarged, which would occupy 116 days. The total time, therefore, required to complete the Sutro Tunnel to the Comstock lode would be 931 days, or two years, six months and twenty-one days."

The committee would remark in regard to the removal of the rock for 4,618 feet, that estimating the sectional area at nine yards, the amount is only 13,854 cubic yards, on which, as the cut can be worked all along the top and at the two ends, sufficient number of men can be employed to remove it in the time indicated.

Mr. Carlyle then cites numerous instances of shafts sunk by different companies, and tunnels driven to the Comstock lode, which prove that his estimate of four feet per day in sinking shafts and five feet in driving tunnels, whenever prosecuted with energy, is confirmed by experience, making due allowance for their size and other circumstances which in some cases have retarded work.

Your committee are of the opinion that, with proper energy, a sufficiency of capital, and provided no extraordinary obstacles are encountered, the tunnel might be finished in the time stated, but it is so well known that delays are met with in works of this kind, from causes impossible to anticipate, that it is probable that an additional time of at least one year may be occupied. It is safe to say that, making all due allowance for contingencies, the tunnel can be completed in from three and a half to four years.

#### COST OF THE WORK.

The estimate of Mr. Carlyle is given very much in detail, and is accompanied by a number of bids from miners, foundrymen, boiler-makers and others, who state the prices at which they are willing to make the excavations, furnish the machinery and necessary mechanical works connected with the enterprise.

As the calculations of quantities are made with an unusual degree of care, there seems to be very little margin for variation from the estimate. We extract from Mr. Carlyle's report the following table of the cost of the work, which includes cost of tunnel, of a double railroad track and cars, stationary engines, ropes and fixtures for the removal of the ore from the lode to the mouth of the tunnel:

#### SUMMARY OF ESTIMATE.

Materials and labor for sinking shafts and running preliminary tunnel.....	\$416,467 05
Materials and labor for enlargement of preliminary tunnel.....	619,854 10
General materials and sundries not included above.....	66,439 03
Machinery for the shafts.....	121,679 00
Boilers for above machinery.....	33,126 40
Erection of machinery and necessary buildings.....	32,265 00
Expense of operating machinery in sinking shafts.....	138,734 27½
Expense of running preliminary tunnels.....	\$24,784 90
Cost of best appliances complete for hauling out ore (3,000 tons per day).....	49,326 00
	\$1,503,287 72½
Add 10 per cent for superintendence and general contingencies.....	150,328 77½
Grand total.....	\$1,653,616 50

Cost per lineal foot, \$98.25.

In the above estimate the cost of sinking an aggregate depth of 4,220 feet of shafts was—

For labor, excavating shafts and setting the timbers (from proposal of William Veelen).....	\$117,270 00
Materials used, blacksmith's and carpenter's work.....	70,155 16
Expense of engines and attendance.....	138,734 27
Total cost.....	\$326,162 43

Or, \$77.29 per foot lineal, exclusive of the cost of engines and machinery, which amounts to \$187,680.40.

One of the engines is intended to be used after the completion of the tunnel to operate the machinery for moving the cars on the railroad. The remainder, and a portion of the machinery can be sold, but Mr. Carlyle has made no deduction from his estimates on account of proceeds obtained from their sale.

In the annual report of the State Mineralogist of the State of Nevada, for 1866, page 93, it is stated that the cost of sinking the Bonner shaft of the Gould & Curry company, exclusive of cost of engines and machinery, was \$76,378.40; depth attained,

692½ feet; price per foot, \$109.36. The shaft consists of four compartments, five feet square, and is cribbed with 12-inch timbers. It is capable of working the mine to the depth of 1,200 feet.

This shaft is about double the size of those proposed for the Sutro Tunnel, and the actual cost per foot lineal is but 41½ per cent. greater. It would seem, from this experience, that the estimate for the cost of the shafts is sufficient.

We do not find any statements of the actual cost of constructed tunnels of great length and of as small dimensions as the one proposed by Mr. Sutro.

The Sapperton tunnel, on the Thames and Severn Canal, England, through rock partly lined with masonry, is 12,900 feet in length; sectional dimensions, 15 by 15 feet; cost, \$12.44 per foot lineal.

The Hare Castle tunnel, on the Trent and Mersey Canal, England, through rock and sand, lined throughout with masonry, is 8,778 feet in length; sectional dimensions, 14 by 16 feet; cost, \$57.05 per foot lineal.

The Blisworth tunnel, on the Grand Junction Canal, England, through rock and clay, lined throughout with masonry, is 9,240 feet in length; sectional dimensions, 16½ by 18 feet; cost, \$23.18½ per foot lineal.

Edge Hill tunnel, on the Liverpool and Manchester Railroad, Eng., through clay and freestone, partly lined with masonry, is 6,600 feet in length; sectional dimensions, 22 by 16 feet; cost, \$30.15 per foot lineal.

It will be noticed that the sectional area of all these tunnels is about twice that of the one proposed by Mr. Sutro.

The Nochotestengo tunnel, made in 1607, to drain Lake Zupango, in Mexico, is 21,659 feet in length, through clay and marl; its dimensions are 13.78 by 11.48 feet, and it was completed in 237 days. The maximum depth below the surface was but 164 feet. Cost not stated.

We could, if our limits permitted, give statements in relation to many large tunnels constructed on lines of railroads, within a few years, but we will conclude our remarks on this subject by submitting an extract from Gen. McClellan's memoranda of railroads:

"The Nerthe tunnel, near Marseilles, is 15,153 feet long; has twenty-four shafts, whose aggregate length is 7,589 feet, the deepest being 610 feet. It is in very hard limestone rock; is 29½ feet high by 26½ feet wide. The shafts are lined with masonry; a portion of the body of the tunnel is lined with masonry, one, two and three bricks thick; another portion is not lined at all. A semi-circular brick aqueduct, 4½ feet in diameter, runs the whole length of the tunnel under the floor. The time occupied in the construction is not stated.

"The cost of the Nerthe tunnel was as follows:

For mining the body of the tunnel.....	\$705,582 20
For mining the shafts.....	409,081 08
Masonry for the shafts.....	49,009 51
Lining for the body of the tunnel.....	\$25,711 18
Cost of aqueduct.....	10,607 10
Total cost of tunnel.....	\$1,299,450 87

"The average cost of excavating the shafts, which are nine feet ten inches in clear diameter, was \$43 per yard downward; the average cost of lining the shafts was \$19.40 per yard down. The deepest shafts cost, on the average, \$73 per yard down, completed.

"Cost of mining the body of the tunnel, \$139.76½ per running yard."

James Hayward, Civil Engineer, in his testimony before a committee of the Legislature of Massachusetts on the Hoosac tunnel, states that not more than five years were occupied in the construction of the Nerthe tunnel.

The sectional area of this tunnel, supposing the top to be a semi-circle, as is usual on railroads, is about 700 feet, or more than six times that of the Sutro tunnel.

These statements are given that those interested in such inquiries may institute a comparison between the cost of works which have been constructed with the one proposed by Mr. Sutro. In such a comparison, due allowance must, of course, be made for the difference between the cost of labor and material in Nevada and other countries.

After reviewing Mr. Carlyle's estimates as carefully as time would permit, we have come to the conclusion that liberal prices have been generally allowed for the several items of expenditure; but, taking into consideration the liabilities of interruptions from breaking of machinery and irruptions of water, to which works of this description are subject, it would be safer to add for such contingencies twenty-five per cent. to his estimates, making the whole cost about \$2,500,000.

From a pamphlet published by Mr. Sutro in New York, in September last, we learn the following facts:

The Legislature of Nevada, in February,

1865, granted to A. Sutro the exclusive right for fifty years to run a tunnel from the foot hills to the Comstock lode, leaving the rates to be paid by the mining companies open to voluntary agreement. Subsequently a contract was made with all the leading companies, by which they agreed to pay two dollars for every ton of ore extracted after the main tunnel is completed and actually drain the mines; or, if they are not drained, then after a lateral drift reaches under any mine; one dollar per ton for every ton transported through the tunnel, and twenty-five cents for each man to be transported through the tunnel, either in or out.

We understand from Mr. Sutro that these contracts are subject to the condition that he and his associates obtain subscriptions to the amount of \$3,000,000 in currency prior to the 1st of August, 1868. The mining companies have already subscribed between \$300,000 and \$400,000, as part of the above amount, to become binding when the residue is subscribed.

In July, 1866, the Government of the United States passed a bill which grants—

1st. The right of way through the public domain for seven miles on or along the Comstock lode, or any other lode which may be developed or discovered by the tunnel.

2d. The right to select one thousand two hundred and eighty acres of land at the mouth of the tunnel.

3d. The right or title to the mines for two thousand feet on each side of the tunnel, equal to five thousand and eighty acres of mining land.

4th. It makes all the mines of the Comstock lode, or any other lode benefited by the tunnel, tributary to the same, and compels the owners of all those mines to pay to the Tunnel company the same rates of charges as agreed upon in the above mentioned contracts, and makes their title subject to that condition.

The aggregate income of the Tunnel company from the various sources, taking the yield of the mines to be 1,500 tons daily, is \$7,200 per day, or about \$2,500,000 per annum. The yield of the mines, however, is expected to be largely increased after the completion of the tunnel, which would double or treble the income of the company.

A number of mines have been located east of the Comstock lode, which show fair prospects on the surface and may be valuable in depth.

The land of the Tunnel company will also prove of high value, for whenever the tunnel is completed, a settlement will spring up at its mouth, as the mines must be entered and worked from that point.

The evidence adduced by Mr. Sutro in the pamphlet referred to (copies of which are on the tables of the Institute), must be sufficient to satisfy any one who will take the pains to examine the subject, that the capital invested in the enterprise must yield a large revenue. When it is recollected that the annual produce of these mines is about four-tenths of the whole yield of the precious metals in the States of Nevada and California, and that the prosperity of San Francisco is largely dependent upon the mineral resources of the country, we must conclude that every merchant, mechanic, manufacturer and land-holder in this city is deeply interested in the project.

In this connection the committee would call your attention to a letter to Mr. Sutro, dated October 5th, 1866, and signed by Moses Taylor, Peter Cooper, August Belmont, Eugene Kelly, R. C. Ferguson, Wm. T. Coleman, C. K. Garrison, Duncan, Sherman & Co., and other leading capitalists of New York. This letter is found in the pamphlet on the Sutro Tunnel, to which reference has been previously made.

"If the mining companies on the Comstock lode, and the people of Nevada and California, who are familiar with the value of your mines, would evince their confidence in the enterprise by subscribing a portion of the requisite capital—say four or five hundred thousand dollars—and work on the tunnel is actually commenced, we think you will find it comparatively an easy task to obtain the balance of the funds here.

"We would consequently advise you not to lose any valuable time in futile attempts here or in Europe, where, no doubt, the same objections will be raised, but to return at once to San Francisco, and use your efforts there to get the work started."

That it is both the duty and the interest of the people of San Francisco to aid this enterprise by such contributions as shall secure its success, is too evident to need further illustration or enforcement.

The committee recommend the adoption of the following resolutions, embodying a summary of the views expressed in the preceding report:

#### RESOLUTIONS.

First.—That the Comstock lode is a vein



of extraordinary value, presenting every feature of permanency and continuance in depth, much further than mining works can ever be carried.

Second.—That experience in all countries shows conclusively that the difficulties in drainage and ventilation limit the depth to which mines can be worked, and whenever attempts have been made to work them below this limit, without the aid of adits or tunnels, the result has been disastrous to the owners.

Third.—That the proposed tunnel will, by affording good ventilation, diminish the temperature and greatly improve the sanitary condition of the miners.

Fourth.—That the Comstock lode must have a drain tunnel, or the mines must be eventually abandoned.

Fifth.—That the proposed Sntro Tunnel is a work entirely feasible, and offers no unusual mechanical difficulties whatever, and we believe it can be constructed, with proper energy, judicious management, and a sufficiency of capital, in from three and a half to four years, at a cost of about \$2,500,000. But were a work required of such magnitude as to cost \$10,000,000, necessity would demand its construction.

Sixth.—That the rights granted to the Tunnel company, the contracts made with the mining companies, and the chances of discovering valuable mines, make this enterprise one of the most promising undertakings ever projected on this coast, and offers extraordinary inducements for the investment of capital.

Seventh.—That by means of this tunnel a permanence and importance will be given to the mines on the Comstock lode which can hardly be realized now; that the produce of hollion from the mines may be doubled, and even trebled, exercising a most beneficial influence upon the commerce, the industry and resources of San Francisco.

Eighth.—That every citizen of California and this coast at large, who has the future welfare of the Pacific States at heart, should lend a helping hand, and encourage in every way and manner the execution of this great work.

Ninth.—That recognizing the influence which the production of the precious metals has upon the general welfare of the Nation, in increasing its taxable property and consequently its revenue, we respectfully solicit Congress to give liberal aid to the work, in such manner as in their wisdom they may deem proper.

Tenth.—That we fully recognize the foresight of A. Sutro, Esq., in projecting this great work, and highly appreciate the intelligent manner in which he has presented to the public the importance and necessity of this enterprise.

All of which is respectfully submitted.

WM. J. LEWIS,  
ARCH'D COOPER,  
P. M. RANDALL.

**THE SKULLING BLADE APPLIED TO STEAM-BOAT PROPULSION.**—Mr. William Sublett, of this city, has invented and taken the preliminary steps to secure a patent for a rotary application of the skulling blade to the propulsion of steamboats. The device is similar in its application to the propeller; but the blades, instead of working on the principle of the screw, approach fully to that of the skull. He has been engaged for several years in perfecting the idea, and has now completed a working model, which is operated by clock-work, and which appears to work very efficiently. The model has three wheels or propellers—one at the stern, and one upon each side, operated very much like ordinary paddle-wheels; but avoiding the jar and dead-water lift of the paddles. The model, which weighs only one pound, will start a load, in the form of a harge weighing 200 pounds, and move it six feet in ten seconds.

**NEW INCORPORATIONS.**—The following companies have filed their certificates of incorporation since our last issue:

April 20th.—Robertson Track-Laying Machine Co. Capital stock, \$500,000, in 500 shares. Trustees: C. Temple Emmett, Alpheus Bull, Wm. H. L. Barnes, Ephraim W. Leonard, Charles E. McLane, Thomas H. Holt and Almarin B. Paul.

April 23d.—California Immigration and Agricultural Co. Capital stock, \$1,000,000, divided into 10,000 shares of \$100 each. Trustees: A. E. Fraser, William Greene, Samuel Brannan, Erwin Davis, J. Gundlach, A. W. Nitsch and N. O. Arrington.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
April 27, 1897.

### CITY STOCKS.

Under the increased activity which pervades the Mining Share Market, city stocks have been somewhat neglected for some time past. Early in the week, Pacific Ins. Co. stock sold at \$122, and National at \$74 per share. Spring Valley Water realized \$66.50@67, and San Francisco Gas \$66@66.50. Twenty shares of North Beach and Mission R. R. sold at \$49.50 per share.

We call attention to the following important by-law recently passed by the Stock and Exchange Board, relative to "deposits on contracts."

"In any bargain made at the Board, except for cash, either contracting party may require of the other to make a deposit of not more than twenty per cent, the amount of purchase money as security for the fulfillment of the contract, and notice of such requirement shall be given on or before two o'clock P. M., of the same day. And should the stock contracted for vary in price to within five per cent. of the margin of said deposit, either party may call for an additional deposit of ten per cent., and may continue to do so as often as the last deposit may be exhausted by change of price—it being fully understood that either party may draw down any excess of twenty per cent. that may be in his favor. When the seller deposits his stock, the deposit paid by the buyer shall go to the seller. When a member of this Board neglects or refuses to put up the usual deposits on time contracts, after due notice of requirement, it shall be at the option of the opposite contracting party either to cancel the contract or continue it, by purchase or sale, through the President of the Board, with some other member, on his account, the defaulting party to be held responsible for any differences."

### MINING SHARE MARKET.

The improvement in the Mining Share Market, inaugurated some time since, has continued in a very material degree, and nearly all first-class stocks have been actively dealt in this week at higher rates. Recent developments in several claims are regarded with much favor, and more confidence in the future value of the Comstock lode is now felt than for a year past. The present fine weather has greatly improved the roads, giving teamsters active employment in carrying ore to the different mills. We understand that no settlement has yet been made by the parties representing the "short" interest mentioned in our last issue.

**HALE & NORCROSS.**—No sales during the week under review; \$3,500 per foot was asked. We have nothing of special interest to report relative to this company's mine. The new shaft is down 281 feet.

**SAVAGE**—has been rather quiet, though the comparatively few shares sold show an advance, opening at \$2,600 and gradually rising to \$2,750, and closing yesterday at \$2,775. This company's mine produced only 778 tons of ore during the week ending April 20th, of which amount 29 tons came from the old works, 116 tons from the sixth station, 506 tons from the seventh station, and 127 tons from the Curtis shaft works. The assay value is given at \$25.149, or \$32.32 per ton. The quality of this ore does not represent an average of the breasts, since most of it came from points where it could be obtained without timbering. This they were obliged to do on account of the short supply of mine timber, the Washoe grade being in such a condition as to prevent hauling; however, we learn that teams are now able to pass either way. It is said that some fine ore is obtained from the upper floors, at the southeast end of the breast on the sixth station, at which point it is believed a considerable body yet remains. In the seventh station, the breasts are said to look well, and from which a good quality of ore is taken. The drifts toward the ledge on the third station, from the Curtis shaft, are now in softer rock, as is also the sinking of the shaft toward the fourth station, which has attained a depth of 30 feet.

**CROWN POINT**—has been in marked request at enhanced figures, the sales having been much larger than for some time past, advancing from \$1,395 to \$1,500, buyer 3, receding to \$1,400, then selling at \$1,460 @1,450, and closing at \$1,460. During the week ending April 19th, owing to an accident to the engine, which delayed hoisting for a few days, only 350 tons of ore were taken from the mine. The lode on the 500-foot level is said to look very promising, and the drift on it extends some six feet to the north. In the west drift, same level, work is at present suspended for the purpose of putting a pump down and making preparations to sink for another level.

**YELLOW JACKET**—advanced from \$1,300 to \$1,350, seller 30, then sold at \$1,290, and closed yesterday at \$1,325.

**GOULD & CURRY**—receded from \$480 to \$450, and closed at \$500, b. 30. We learn that this company's mill continues to run upon ore from its own mine, but the supply is said to be rapidly diminishing.

**CHOLLAR POROSI**—continues in great favor and large sales have been made, opening at \$400, advancing to \$475@480, and closing yesterday at \$499. During the week ending April 20th, 2,400 tons of ore were sent to custom mills; previous week, 1,686 tons. The old Santa Fé station is said to be looking better than ever, especially in breasting north, where the ore is found to be of a much better quality than in any other part of the slope. The winze from this station is down 60 feet, and the bottom is said to be in good ore. Work has been suspended in this winze for a few days, on account of bad air. The drift which is being run to come in 127 feet below the Santa Fé station, has been already opened 100 feet. It is thought that if the ore keeps the pitch which it has in the winze, it will attain a width of about 70 feet in the new station. In the first station drift from the new shaft, the body of ore is said to be getting larger and wider every set they raise up on it. It is now about 60 feet long and from 10 to 20 feet wide, producing from 65 to 70 tons of ore per day.

**OPHIR**—has changed hands to a large extent, improving from \$345 to \$400, then selling at \$360@385, and closing at \$388. This company continues to drift south and north on the tenth station. In the south drift, a cross-cut has been run west to the ledge, but without developing ore at latest advices. The main drift south is in about 110 feet. The north drift has been recently started, and will reach the ledge in about 60 feet running.

**IMPERIAL**—has been well maintained within a range of \$278@282, and closed yesterday at \$275. The hollion returns of this company to the second clean-up of the present month, amounted to \$37,000, against \$29,000 for the same period in the month of March. The mills continue to crush the usual amount of ore—the Rock Point 90 tons per day, and the Gold Hill 40 tons. Preparations have been made to place buildings at the Imperial-Empire shaft.

**BELCHER**—advanced very rapidly from \$205 to \$355, dropped to \$250, then sold at \$300, and closed at \$310. . . . **EMPIRE** sold within a range of \$185@190. . . . **ALPHA** obtained \$400 per foot. . . . **BULLION** sold at \$32@47, and closed yesterday at \$50. . . . **OVERMAN** advanced from \$28 to \$42.50, and closed at \$35. . . . **CONFIDENCE** commanded \$36@38, then sold at \$47@60—an assessment of \$10 per share having been levied upon the capital stock of this company on the 23d inst.—and closed at \$52. . . . **DANEY** sold at \$7@10. An assessment of fifty cents per share was levied by this company on the 25th inst.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,294,057.

**NEVADA SURVEYOR-GENERAL'S REPORT.**—We have received a copy of the report for 1866 of S. H. Marlette, Surveyor-General of Nevada.

## Hazard's Powder.

**BLASTING AND SPORTING GUNPOWDER.**

SUPERIOR QUALITY.

Also, SAFETY FUSE OF ALL KINDS.

EDWARD H. PARKER,

Agent for the Hazard Powder Company, 224 California Street. 15v144f

## Professional Cards.

### SHERMAN DAY, Mining Engineer.

No. 114 Montgomery Block, San Francisco. Will examine, survey and report upon mines, and consult and advise concerning investments in mining property, or the machinery management and expenditures of mines. 22q

### CHAS. LIEBENAU, Mining Engineer and Metallurgist.

(Graduate of the Mining Academy, Freiberg, Germany.) Oro, Flint District, Owyhee Co., Idaho. References.—George Hearst, John W. Oashwiler, Rebn, Henne & Co., and J. M. McDonald, San Francisco; E. R. Purdie, New York; William Bigler, Penn. 14v14-3m

### FREDERICK MANSELL, Mechanical & Architectural Draughtsman.

No. 422 California street, corner of Leidsdorff. Drawings of Monuments made for parties applying for patents at Washington or London. mar25-4f

### GREGORY YALE, Attorney and Counsellor at Law.

No. 18 Merchants' Exchange, (Battery and Washington streets.) Special attention given to obtaining Patents for Mining Lodes under the Act of Congress of July 26th, 1866; and Claims filed before the U. S. Registers and Receivers in any of the Land Districts in the State, and Contests before the Courts, under the Law, attended to. Opinions prepared upon all questions relating to Mining Laws. 1v14-1m

### E. V. JOICE, NOTARY PUBLIC.

N. E. cor. of Washington and Battery sts. 12v144f SAN FRANCISCO.

### GEO. T. KNOX AND E. V. SUTTER, COMMISSIONERS OF DEEDS.

NOTARY PUBLIC, 615 Montgomery Street, San Francisco. 15v144f

### JAMES M. TAYLOR, Attorney and Counsellor at Law.

COURT COMMISSIONER, appointed by the Fourth District Court, COMMISSIONER OF DEEDS for Nevada and Massachusetts. Court Block, San Francisco. Entrances opposite City Hall, Merchant street, and 636 Clay street. 14v144f

### W. E. GOLDSMITH, Card and Seal Engraver.

505 Montgomery street, up-stairs, (over Tucker's.) SAN FRANCISCO. Wedding and Visiting Cards printed with the utmost neatness; Notarial, Commissioner and Society Seals. 15v13-2q

### GEORGE H. POWERS, M. D., Gives exclusive attention to Diseases of the Eye.

Office, southwest corner of Bush and Montgomery streets, Room 7 and 8. Office hours, 10½ to 12, and 2 to 4 o'clock. References.—Rev. A. L. Stone, D.D., Ira P. Rankin, and L. B. Benchley. 4v13tr

### DR. H. AUSTIN, DENTIST.

No. 634 Washington Street, Between Montgomery and Kearny Streets (OVER SAN FRANCISCO BATHS) SAN FRANCISCO. 20v10-qy

### DR. A. HARTMAN, Electro-Magnetic Physician.

CURES ALL CURABLE DISEASES, BY THE CONCENTRATION of the vital forces. Nature's own method of cure. The blind made to see, the deaf to hear, the lame made to walk, and the sick healed. Come and see the afflicted at the rooms. They will speak for themselves. The poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating rooms, 410 Kearny street, between Pine and California. 2v13m

### JACOB SHEW, Pioneer Photographer.

612 Clay street, north side, four doors above Montgomery. (Late 315 Montgomery street.) Takes all kinds of Photographs in the best style of the Art. He would invite special attention to the new "Cabinet Photographs," which he is taking to perfection. 10v144f

### BLAKE'S PATENT QUARTZ CRUSHER.

**CAUTION!** The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1866. This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials are crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages. Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages. BLAKE & TYLER, Agents for the Pacific Coast. 14v144f



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of April 13th: At no time since the discovery of silver in Alpine, have our prospects appeared as bright as now. So soon as the roads will admit, the pans for the George Washington Mill will be brought in. An abundance of good pay ore will be on hand at the mill. On Saturday a chimney showing five feet of good rock was opened.

News came on Thursday evening, that the twenty-five pounds of Tarshish ore, taken to Virginia City, yielded by assay \$1,200 in silver and \$200 in gold per ton, and that Mr. Graff had sent back a proposition to purchase all the ore in the mine at \$400 per ton and mine it himself.

From the Alpine *Miner* of April 20th: The lode struck last week in the Tarshish tunnel is now penetrated a distance of twelve feet, and no sign of another wall yet. The ore being taken out to-day is better, too, than any before found.

The Sam Booth Company have commenced operations on their tunnel.

## Amador County.

From the *Ledger* of April 20th: Tubbs' Mill has again been put in operation. They are now sinking on the mine, and the deeper they go the richer the rock becomes.

Coney & Bigelow will immediately erect the necessary works for reducing their sulphurets by the Plattner or Chlorination process.

The Mountain Mine, better known as the "Belding," has commenced operations again.

## Calaveras County.

From the Calaveras *Chronicle* of April 20th: Hoerchner, Grimm, Mayer & Co., Middle Bar Dist., have a 16-ft ledge. A tunnel 100 ft. in length, has been run directly on the lead, and good judges inform us that the rock extracted will average \$20 per ton. A mill will be erected during the coming summer.... Wesson & Co., in the same district, have resumed operations. As they go down, the lead increases in width, and the indications are flattering.... Alexander, Seaver & Co., have completed the mill on their claim in Rich Gulch, and will commence crushing next week. The battery of 10 stamps, will be run by a "hurdy-gurdy" water wheel, seven feet in diameter, and can work 20 tons per day.

Letter from West Point: The Carsner Bros. are about to put up a Wilcox pump to free their mine from water.... Mr. Lacy on Valentine Hill, has a shaft down 150 ft. The rock improves as the depth increases.

"Camanche" correspondence of the San Andreas *Register* of April 20th: Cat Camp is all the rage. Miller & Jennings have a claim which prospects from five cents to 50 per pan, taking the dirt all the way from top to bottom. They have run a cut a short distance into the hill, and have now from 12 to 15 ft. of dirt. Another company started in a hill directly south of them, and the first pan of dirt paid 15 cts. Coburn & Drevis have a claim which prospects well. Mr. Jos. Zimmerman has a claim, from which he has panned out \$85. He worked yesterday, (April 15), with a rocker, washing the surface dirt, as he took it from a new cut he had just started, obtaining \$10. There are other claims equally good. The ground prospects well in the gulches, on the hill sides, in the flats, and, in short, everywhere. I have seen Chinamen working with rockers where the dirt was not over 18 in. deep, and I am confident, from the appearance of the gold in their pans, that they make \$4 or \$5 per day. Steps have been taken to bring in a ditch this summer.

## El Dorado County.

From the Placerville *Courier* of April 20th: Work on the Shepherd mine, at Poverty Point, is prosecuted with vigor, and very rich ore is daily taken out. At Browns-ville, Messrs. Geo. W. Swan & Co., of this city, have, in the Independence mine, after running a tunnel for 200 feet, struck a fine ledge, and the rock is very rich. It is the intention of the company to put up a mill.

Coloma letter: Peterson & Nicholson have recently erected a first-class 5-stamp mill upon the "Danes" claim." The rock is mostly decomposed and mixed with red earth, which is very rich in gold. Since they discovered this claim, they have paid up all debts to merchants, etc., made each a matrimonial trip to the old country, and built a mill, all on the proceeds of rock freighted 18 miles to a custom mill. Last week, from a two days' run, they realized \$20,000. Dr. Nichol and the Tensher boys are supposed to be upon the same ledge as the Danes. They are taking out very rich

rock, and have erected an arastra. They have a 53-foot wheel, carried by water from one of the ditches upon the north side of the river.

## Kern County.

From the Havilah *Courier* of April 13th: Burdett, Bequette & Co. have struck very rich rock in the Sovereign ledge. The tunnel strikes the ledge forty feet below the croppings, and the body of pay ore is five feet in width. The rock is the blue sulphuretted rock of this district, and free gold is visible. An assay yielded at the rate of \$155 per ton.

## Klamath County.

From the Humboldt *Times* of April 13th: A correspondent says: Water is plenty, and the hydraulic claims are all doing remarkably well. The Black Bear quartz lead is turning out to be a big thing. The company have sufficient rock in sight to run their mill eighteen months, and it yields from thirty to two hundred dollars per ton. Of the copper mines, the Klamath company's claim looks exceedingly well.

From the Yreka *Union* of April 13th: Dick Humphreys gives us these notes of the Cottage Grove mines: The claim of Elliott & Co. is yielding from one oz. to \$20 per day to the hand. Aubey & Co. are making from one oz. to \$12 per day to the hand. Mullinax & Co., are making from \$10 to \$16 per day to the hand.

## Mariposa County.

From the *Gazette* of April 13th: Work still continues at the Hornitos quartz mill, now owned by Mr. Dyer. The last cleaning up showed a yield of from \$15 to \$18 per ton.

Same of 20th: The work of reconstructing the dilapidated condition of the Mariposa estate will commence as soon as the present manager can make his arrangements.

From the *Mail* of 20th: Richard Van Game recently discovered a gold mine about three miles from the Feliciano, on Sweet-water. The ledge is about two feet wide on the surface, and prospects at the rate of \$25 to \$30 per ton.

Coulterville letter: The Heslep mill and mine are now owned or managed by Mr. Pond and others. William Wright has sold to San Francisco men the mill and mine in the North Fork, near the Bower cave, for \$5,000 cash. William Hampton has struck a rich vein near Smith & Dudley's old ranch. He is now sinking on it. Douglas & Chamberlain are about to commence erecting machinery on their mine.

## Nevada County.

From the *Transcript* of April 18th: In Refuge Hill Dist., two miles north of this city, Stokes, Watt & Co. have struck first-rate gravel. The lead is supposed to be the extension of the old Nebraska ground.

Same of 19th: On Wednesday last, Leeth & Barton, on Deer creek, found a quartz pocket, from which, in a few hours, they took out over \$600 in gold. This strike was made near the door of Leeth & Co's cabin, and men had been walking over it for years.

Same of 21st: The owners of the Vanderhilt mine, at the head of Rush creek, have commenced an incline.

The Golden Gate mining Co., at San Juan, at their last run, cleaned up \$6,800. This company has heretofore been levying assessments.

Same of 23d: The English Co. at Badger Hill, near Cherokee, has now control of nearly all the ground on the hill, and opened a range of gravel that is very rich.

San Juan is livelier than it has been for years, and it is next to impossible to find a residence for rent. Two years ago it would have been easy to rent one-fourth of the houses in town.

Same of 24th: The incline in the Cunningham mine is now 200 feet below the surface, and a new level will be commenced. In the old drift, some excellent rock has been obtained lately.

From the *Gazette* of April 23d: E. W. Mull has recently sold his interest in the Buckeye claims, near Sweetland, to John Stidger, for \$9,000. The immense slide which, about Christmas last, covered the ground, is nearly worked off, and they expect to clean up in a week or two.

E. D. Dean has sold his gravel claims at Myers' Ravine, to Shively, Calkins & Co., for \$9,000 in gold coin. A ditch, leading water to the claims, and some other property, were included in the sale.

From the Grass Valley *Union* of April 20th: The rock in the Evening Star ledge, Grub Flat, looks well—every piece showing pure gold when pounded up.

Letter from You Bet to Dutch Flat *Enquirer* of April 24th: The old Dable & Webster claim, on Brown's Hill, is now paying \$20 to the hand. Ed. Williams is the present owner. George M. Nickell cleaned up \$1,800 after a run of ten days

with an expense of about \$700, leaving him over \$100 per day for his profits.

EXCELSIOR.—From the Meadow Lake *Sun* of April 13th: The Golden Eagle Co. have been taking some remarkably rich ore from their mine during the past two weeks.

Letter to *Enterprise* of April 19th: The California Co. are still sinking on their ledge, which is very promising. The ledge is now about eight feet wide, and they are not yet through it.

From the Nevada *Gazette* of April 20th: Captain White, just down from Meadow Lake, informs us that the snow is melting off slowly. The California mill is the only one running at present, the mill of the Grant Co. being stopped for repairs.

## Placer County.

From the *Stars and Stripes* of April 17th: Letter from Yankee Jim's: The Bradley claim is again in operation, with net profits of \$100 per diem. Mrs. Fitzgerald, who was one of the owners, has recently sold out to Mr. Donelin—one third share, there being three shares in all—for \$3,000. Dr. Harris, purchaser of the five stamp mill of Ambruster, on Georgia Hill, has, after a run of two weeks, closed down for the purpose of erecting five more stamps. The mill of the Borland brothers has not yet commenced operations.

Valley View correspondent of the Placer *Herald*: The Gold Quarry Company have one of the finest mills in the State. Mr. Crosby will erect a mill this summer. Mr. Hank Williams has recently struck a rich vein of gold bearing quartz and intends developing it immediately. Messrs. Huck & Co., are getting out very rich rock from their ledge. Valley View is on the former site of Whisky Diggings, and has a population of 150.

From the Dutch Flat *Enquirer* of April 17th: The Dutch Flat Company, in this place, after a run of sixteen days, seven men working, cleaned up the sum of \$3,003.51; B. Fitzpatrick after a run of eighteen days, \$2,480. Baldwin & Bailey after a run of thirteen days, \$1,040. The Golden Gate Company \$2,000 after a run of nineteen days. Huyck & Judd after a run of 17 days, \$2,000. The Moore, Taylor & Harriman claim from a run of twenty-two days, \$5,500; this is the largest yield ever obtained from any one run in the district.

## Shasta County.

From the *Courier* of April 20th: Over 20 men are now employed on the Chicago claim, and two tunnels are being run. The shaft is down 75 ft., and very rich ore is being taken from it. Eight tons of first class silver ore from the main shaft is now ready for shipment.

## Sierra County.

From Indian Hill letter to the Downieville *Messenger* of April 20th: Jones & Co. cleaned up \$1,040, after a short run. Charlton & Co. have as rich gravel as can be found in the State. Specimens of the cement show gold in great abundance. Andrus & Co. are tearing down the hill in a wholesale manner, and reaping a rich harvest. Bliss & McKean, two old men, while excavating a piece of ground for a reservoir, struck a lead which is paying them well.

Letter from Poverty Hill: Report has it that the Conway Co. have sold their claims for \$8,000. Hawkins is reported to have sold his remaining interest in this section, for \$9,000. J. H. Ferguson has sold out for \$10,000. John Conly and the Kingdoms, of La Porte, are the reputed purchasers of all this property. Preparations are being made to run a tunnel 2,500 ft. long, for hydraulic purposes in the spring.

## Siskiyou County.

Jos. Lang & Co. took from their claim on Humbug Gulch, last week, several chunks of gold of very respectable size. The largest weighed twelve ounces, and there were several others that weighed from two to six ounces.

E. Steele will commence work afresh on old Steamboat claim next week.

## Trinity County.

From the Weaverville *Journal* of April 6th: Fred. Deiner has been running two pipes all winter, and has washed off an immense amount of upper dirt. James Gardiner has purchased the claim on Stroufe creek worked last year by Draper & Johnson, and it is paying first-rate, now. One day last week he picked up a nugget weighing \$40. Quite a number of miners are now at work near the head of Buckeye creek.

## Tuolumne County.

From the Columbia *Citizen* of April 20th: Kane Bros. have opened a rich vein.... Friel & Co. have opened a new claim on the Columbia Gulch flume, which promises well.... The Portuguese on the burnt district are making good wages.... Ed. Skinner & Co. have discovered a sink in an old claim by the side of the road to Columbia, which

is paying \$3 or \$4 per day.... Harrigan & Haslam, Jo. Ginny and Dorsey & Co. are doing well.

## Yuba County.

From the Marysville *Appeal* of April 19th: The Jefferson Co., at Brown's Valley, opened through into the Pennsylvania mine yesterday. Both mills are now crushing good rock. There is no trouble between the two companies, as has been rumored.

The new machinery for the Bateman claim, consisting of an engine of 25-horse power, five stamps, a Knox grinder and amalgamator, etc., will start to-day for its destination. It is expected to be completed in 60 days. Men are at work day and night taking out pay rock.

From the North *Californian* of April 23d: We are informed that on Thursday last an immense land slide occurred in the Michigan mining claim at Timbuctoo, which will require two week's time to wash away from the Union and Babb Co's claims, they being entirely buried for some distance. The Babb Co. were ready to clean up, but owing to this occurrence will be prevented for some time.

## ARIZONA.

From the *Miner* of March 23d: W. Walker is now engaged with James S. Halstead in opening the Buena Vista gold and silver mine, on the Gila, 20 miles above Fort Yuma.

The Azlan mill and Umpqua mine continue rolling out the gold on a large scale. Woolsey's Ticonderoga mill is following suit, only a good deal more so—if we are to believe half we hear.

The Colusa *Sun* gives a letter from John A. Rush, dated Prescott, March 8th, from which we gather these items: From a ledge some 18 miles from here, we took from the surface 10 or 12 tons of quartz, and had it worked at a mill in the vicinity, with a yield of \$30 per ton. Next, from another ledge, 60 tons, and had it worked at another mill; it contained \$37.50 per ton of gold. We sunk a shaft to the depth of 54 feet—the ledge three feet in thickness. We have sunk a shaft on another ledge to the depth of 100 feet. The quartz has increased in richness as we have gone down. We have taken from this between 300 and 400 tons of quartz, the entire mass of which will pay \$25 per ton.

The Alta has a letter from Great Central Camp, Williams' Fork, April 3d, with these items: The Planet Copper Co. are now working only a dozen or fifteen men, and sending off, say 50 to 100 tons per month, to meet expenses.

The Mineral Hill, Empire Flat, and other mines, are being worked in a somewhat similar manner. It will not pay them to work a full force at present prices of copper.

The Springfield Co. have, as yet, taken out but little ore, and have no well opened vein which would justify the appellation of a mine.

The Great Central Co. have a large force at work. They are now opening a new lead called the "Marion," and have struck a vein of very rich green and grey ore. This vein was only a foot wide a week since, but they have already worked down on it until it measures two and a half feet, and is steadily widening. Their new smelting furnace, of large capacity, will fire up on the 6th inst., for the first time.

## COLORADO.

From the *Times* of April 2d: The shipments have been light this week, owing to severe weather. Several of the companies did not run their mills at all. The Gunnell Co. took out 150 ozs.; the Black Hawk 233 ozs.; Smith & Parmelee, 52 ozs.

From the Denver *News* of April 3d: We have seen to-day a very rich and splendid specimen of ore from the Bates and Hunter lode in Gilpin county. The mine is the property of the Nye Co., and shows a crevice of seven feet width, with 18 in. of fine ore.

At Georgetown, the Washington smelting works will be ready for work inside of a month. The Georgetown works will be ready for work before the end of April. The company is working the Anglo Saxon lode, and have out about 20 tons of ore which yields an average of \$1,600. The Argentine Smelting Co. will probably erect a large furnace in Argentine Dist. The Philadelphia Co. designs erecting extensive works this season. Scott & Packer, on the Nuckolls lode, have out several tons of ore, which shows from \$2,000 to \$3,000 per ton. They have a 3-ft. crevice and about 12 in. of ore. The Saginaw lode is promising; the ore averaging about \$500. The crevice is two feet, and the ore one foot in width. The Wilcox lode has a 6-ft. crevice and eight in. of ore, which pays about \$1,000 to the ton. The C. H. Moore pays about \$200.

## IDAHO.

From the Lewiston *Journal* of April 5th: The placers which have recently been dis-



covered on the tributaries of the Palouse, and the manner in which the gold is found, warrant the belief that much richer gold deposits exist to the east of the present Palouse diggings.

Several parties recently in from Gold creek report the prospects obtained from the hills to be from four to six cents to the pan. Quite a number contemplate a visit to these mines. The distance is about 45 miles from this place.

Four miners came in from Guat creek yesterday. Some new discoveries had been made on the benches bordering on the creek. One of the men informed us that he saw washed out 13 pans of dirt from the new discoveries, which produced an average of 18 cents to the pan, in gold, and in no place was the bed-rock reached. One man informed us that the claims of the company of which he was a member will average from \$3 to \$10 per day to the man with their sluices.

Expressman Hunt reports that mining has not been resumed to any considerable extent in Warrens, as the water had not yet risen sufficiently. The miners of that camp have formed themselves into a joint-stock company for the purchase and erection of a quartz mill. Capital stock, \$10,000. Half the stock is already taken. Those who take shares will have the amount of their stock credited to them as so much done in representing their claims under the laws of the district.

From the Owyhee *Avalanche* of April 6th: The Cosmos mill started up in the early part of the week, but did not get fairly under way before Wednesday. It is now running smoothly.

#### MONTANA.

From the *Post* of April 6th: The "clean-up" of rock from the Black Lode, mentioned last week, was from the tables alone. The gold in the batteries was not counted in. The rock averages over \$50 per ton.

The Hawkeye mill is at work on Kearsarge rock. No clean-up was made for last week. The Christnought mill works well, and the rock crushed last week yielded in the neighborhood of \$100 per ton. Messler & Butler have completed the tunnel on the Butler lode, and struck the lead at a depth of about 200 feet from the surface. The tunnel is 225 feet long, and the crevice eleven feet in width.

Mr. Randall is about to commence the erection of buildings for the mill of the Hot Spring company, in Ramshorn district. The mill has eight stamps and a rotary crusher, and will be in operation by the 1st of June.

The last cupellation from 19½ tons of Legal Tender rock yielded 210 pounds of silver; coin value, \$3,523.

Letter from Bear Town, March 18th, says: Oliver & Co., in prospecting the newly-discovered Cayuse Gulch, struck, last Friday, very good prospects in the gravel. From five to fifteen cents to the pan have been obtained, and they are not within four or five feet of the bed-rock. The shaft is about twenty-five feet deep.

Letter from Highland says the boys are making every preparation for the spring work.

Another says the Red Mountain shaft is going down rapidly. Work on the Golconda progresses slowly.

Summit letter says the crevice on the Butler lode is eleven feet where Messler & Co. struck it. The Lucas Co. are getting rich ore, and keep their 24-stamp mill running day and night. The Nelson lode is turning out some very rich quartz.

Claims at Calkin's Dist., El Dorado Bar, are laid over until June 1st, not being in a condition to work.

HELENA ITEMS.—Turnley's mill cleaned up 300 ounces of retort from Whitlatch Union ore, as the net result of eight days' run.

The Boulder ditch will be seven miles long, and will carry 2,000 inches of water to Montana Gulch, Gold Hill, Montana Bar and Diamond City Bar. An iron pipe, 1,700 feet long and 22 inches in diameter, costing \$40,000, will convey the water across the upper end of the gulch. The principal stockholders are Metcalf & Speigler, who took half a million of dollars out of Confederate Gulch last summer.

From the Helena *Gazette* of March 30th: Dr. La Croix is down 30 feet on the Trappan lode. The crevice is 28 feet, with ore that assays \$600 to the ton. He has 200 tons ready for working. The Arkansas has a seven-foot crevice.

Jofferson City letter to same: During the coming summer we expect several smelters to be in active operation near our town. The report from the Gregory lode is very flattering, showing a constant improvement in the quality of the ore.

Letter from Bear Town: Many claims are

paying well, and this will be a lively camp this summer.

Argenta letter: The furnace of the St. Louis & Montana Co. has been running for the past few weeks, and has produced good results. The chief drawback has been the want of a proper clay for furnace linings.

#### MEXICO.

A letter to the *Alta* from La Paz, Lower California, April 4th, says: The Triunfo Mining Co., the only one in the Territory at this time in full operation, has been doing very well during the past 40 days, turning out hulsion, as I am informed, to the amount of \$25,000.

Mazatlan letter says: The last sign of returning confidence is the impetus given to mining in this State. Several companies are doing first rate, and the silver bars, which were kept in the ore for more than two years, are now rushing into the mint of Culiacan.

#### OREGON.

The Jacksonville *Sentinel* says of the newly discovered mines in Southern Oregon; the district is in the mountains north of Rouge river near the headwaters of Jump-off-Jo. The locality very much resembles Boise Basin—in miniature. Prospecting, thus far, has been limited to the creek and a few gulches, on account of the snow. It is stated, by persons who have visited the district, that diggings that will pay from \$3 to \$15 per day to the hand, have already been discovered.

#### NEVADA.

##### Black Rock.

From the *Eastern Slope*: C. C. Goodwin informs us that the citizens of Susanville, are well satisfied with the prospects of the Black Rock mines. Ward and Bowman have by a process of their own succeeded in working the ores in small quantities, and there is no apparent reason why the same should not work equally well on a large scale.

##### Esmeralda.

The *Trespass* has seen a 60-oz. gold bar, worth \$1,148 from Todman & Cheever's mill, Pine Grove. Assays of ore from Washington Dist., gives \$10 gold to from \$190 to \$290 silver per ton.

From the *Gold Hill News* of April 20th: A new excitement has broken out in regard to a district 30 miles southeast of Wilson Dist. Some of the ore was tested, giving a return of \$312 per ton. The ledge is reported to be 11 ft. wide. There has been a general stampede from Pine Grove. The news spread through Dayton like wild-fire.

##### Humboldt.

From the *Register* of April 13th: The Star City Co. have purchased of White & Wehler, 1,000 ft. of the Golconda lode in Gold Run Dist. Besides paying a round sum in cash, the company contract to erect a mill of sufficient capacity to work 16 tons of ore per day by the first of September next; White & Wehler to own one-half of the mill and mine when the mill is completed. This mine bids fair to rival the Montezuma in extent, while its ore can be worked at half the cost.

Mr. Torrey's furnaces are nearly completed, and his teams are hauling ore. He has over 50 tons ready for the furnace, he sides 500 tons out at the mine. He designs smelting 200 tons on the first run. His ore is equal in richness to the best of the Montezuma, and apparently the supply is inexhaustible. He has some 40 hands at work. By the time he fires up his furnaces his expenses will be \$30,000, but this he expects to get back in the first run and we have not the least doubt but that he will.

The Washington Co. which suspended operations on account of the deep snow, will resume in a few days.

The *Enterprise* says that 10 tons of crude hulsion from the Montezuma mine, in Arabia Dist., is now on its way to California. It is composed largely of lead, only about 200 lbs. in a ton being silver. Freight from the mine to Cisco is 2½ cts. per lb. Thence it goes by rail.

##### Pahranaagat.

From the *Trespass* of April 19th: J. S. Bean informs us that the Illinois Co. has a ledge 26½ ft. wide, with ore assaying \$6,000 per ton. Timber is scarce in the district, but there is a tolerable supply of firewood. In the valley, 10 miles from the mines, where most of the reduction works will be built, water is abundant for milling and agricultural purposes. Croppings of rich coal are also found near by.

A letter to the Salt Lake *Vedette* says: We have mines and ore enough here, of a superior quality, to engage 500 stamps for the next 10 years, without sinking over 20 ft. below the surface. Crippin's Co. are running a tunnel to strike No. 3 claim, west of the Illinois. They are also pushing a tunnel in on the Indiana lode. The Ely & Sanderson and other lodes are being developed with very encouraging prospects.

The San Bernardino *Guardian* has discouraging reports from a party just in from Pahranaagat. Pastboard checks, issued by the stockholders, form the only circulating medium. Water scarce and unfit to drink, especially in summer. One of the party declared that he did not think there was more than one paying mine in the whole district.

##### Reese River.

From the *Reveille* of April 13th: The Mount Tenabo Co. will erect a new mill in Cortez Dist. Geo. Chellis has arrived with the intention of conducting operations.

The Sherman shaft on Lander Hill, has been sunk 104 ft. in 52 days. It is 15 by 5 ft., and thoroughly timbered.

On Wednesday last, steam works were for the first time used on the Magnolia, Lander Hill. Eight and a half tons of ore produced upwards of \$3,400, a few days since.

Same of 16th: J. W. Varney has leased the Empire mill in Yankee Blade Ravine.

The Germania & Bismark, at Milk Springs are large and well-defined ledges. Ore was brought in yesterday for reduction at the Kingston mill.

Same of 17th has an editorial in allusion to the great rush to Silver Bend, and cautioning prospectors who expect to get along with just money enough to get there. It is not like a placer gold region. Capital is absolutely necessary to open up the undoubtedly rich ledges. A man may suffer and starve, while the owner of a silver vein is worth a million of dollars.

Same of 18th: By yesterday's stage 3,560 ozs. of crude bullion came from the mill of the Social and Steptoe Co. at Egan Cañon.

Same of 19th: A pulp assay of ore from the Fisherman ledge gave \$492.98 per ton.

From the *Silver Bend Reporter* of April 13th: An assay of ore from the north shaft of the Silver Bend Co., on the Transylvania, gave the yield of \$5,566.68 to the ton. The shaft is 95 ft. deep.

The Fisher ledge, at Milk Springs, is four feet thick, with splendid rock.

Operations upon the Quintera ledge, will be resumed about the 20th inst.

Work was resumed on Thursday upon the Arizona mine. Prospects are flattering.

At North Twin River, a 3-ft. stratum of ore worth several hundred dollars per ton, has been disclosed in the Murphy, No. 2, at a depth of 40 ft.

The Titan ledge, in Manhattan Dist., is 60 ft. in width, and averages \$57 per ton by assay. This is 15 miles southwest from Belmont.

At Hot Creek, the Merrimac and Indian Jim Cos. have united for the purpose of prospecting the Indian Jim ledge. Their shaft is 40 ft. deep. The Shenandoah ledge has been sold to an Eastern company.

At the Silver Bend Co.'s claim on the Transylvania ledge, there is now nearly 200 tons of ore piled up ready for milling, at the north shaft, which will work \$200 per ton. At the south shaft 400 tons that will probably yield \$125 per ton. The company will erect a 24-stamp mill this summer.

By the first of October there will be 84 stamps, engaged in the reduction of ores from the Highbridge and Transylvania ledges as follows: Combination mill, 40; Silver Bend, 24; Belmont, 20 stamps. By that time each of these companies will have ready for reduction, a quantity of ore, much of which will yield \$500 per ton. At \$200, the combined hulsion product each month of those three companies will amount to \$252,000. Many predict that this will be below the mark.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Trespass* of April 15th: At the south shaft of the Yellow Jacket mine are to be forthwith erected two double engines of 180-horse power, 14-inch cylinders, and 30 inches stroke. These will be used for hoisting ore, while the Corliss engine now in use will drive the pumping machinery.

Same of 16th: Fifty tons of Yellow Jacket croppings are now being worked daily, in addition to the ore raised from the shafts.

Same of 17th: We saw, to-day, two splendid specimens of silver ore from the Highbridge ledge, Combination Co. and Buel claim. One weighs 14 and the other 13 pounds, and an assay shows a value per ton of \$14,300. It can hardly be said that these are quartz specimens, but rather that they are silver specimens mined from the hanging wall of the ledge, with a pedestal of slate, a garnishing of quartz, and an entirety of chloride, horn and native silver ore above the casings. The ledge is 14 feet in width, and is said to be equally rich from wall to wall.

Same of 18th: All conveyances to Belmont and vicinity are crowded.

We learn that a fine body of quartz has been sent in the fourth station of the Gould & Curry.

Same of 19th: The croppings of the Theall ledge have been assayed, and yesterday a gold bar, .999 fine, weighing 144 ozs., was turned out.

Same of 20th: The Eclipse mill is running steadily on \$300-ore raised by a windlass through the incline.

The Bowers and Plato are now raising through both tracks of their incline, daily, 150 tons of ore, that mills about \$30 per ton.

From the *Territorial Enterprise* of April 16th: For several days past the works of the Savage Co. have been idle on account of having no wood—though they managed to get enough fuel to start up their pump last night. Their mills, and in fact all the mills in Washoe Valley, are waiting for ore, but it will be at least four or five days before loaded teams can pass over either the Ophir or Geiger grade.

Same of 17th: On the Gould & Curry, Mr. Hatch, the contractor, has 40 men employed, and is taking out daily 75 tons of ore, worth \$20 per ton and upwards.

The Industrious Co., Summit Lake Dist., four miles north of this city, have three shafts on their 10-ft. lead, of what is thought to be \$80-ore.

The pumping machinery on the Sierra Nevada will be started by the 1st May. At present the Co. succeed in keeping the water in the shaft stationary by means of a large cask with a valve in the bottom for filling and emptying.

The Ophir and Mexican shaft is down 635 feet, and at this depth drifts are being run east and north in search of the lead.

The Central mill, which has been arranged for wet crushing, is now engaged in the reduction of Savage ore. The old roasting furnaces are no longer used, and have tumbled in.

The framework of the Hoosier State mill is up.

Same of 21st: The other day, Harvey Beckwith, Supt. of the Chollar-Potosi, run a drift hack in the direction of the old Chollar croppings, and struck a splendid deposit of ore, estimated to contain at least 100,000 tons. At the present time this mine is yielding 400 tons of ore per day, paying \$20 per ton and upwards. They have fine bodies of ore in the new shaft—in the old works—everywhere. The mine was never before in so flourishing a condition as at present.

From the *Gold Hill News* of April 20th: From the office of Wells, Fargo & Co., in Virginia, there were shipped, last week, 6,520 pounds of assayed hulsion, valued at \$234,101.67; from their office in Gold Hill, 2,640 pounds, valued at \$75,334.42.

The Carson *Appeal* says the workmen on the O'Reilly ledge struck, after running a drift some 26 feet from the bottom of the 90-foot shaft, lately sunk, an immense volume of hot water, which drove them all out of the work. This is thought, taken in connection with other encouraging indications, to be one of the best signs of the proximity of a real fissure vein.

BREAKAGE OF STAMP-STEMS.—We have been told by those who claim to be intimately acquainted with milling operations in both Grass Valley and Virginia City, that while the breakage of stamp-stems (iron) is a thing almost unknown in the former place, it is a serious evil and cause of expense in the latter. The breakage, we understand, is just above the junction of the stem with the stamp. We have been told that the average duration of a stamp-stem in Virginia City scarcely exceeds twelve months. The breakage is supposed to be the result of a partial crystallization, caused by the vibration from the jar of the blows. The broken stems are mended by welding, until the iron becomes too much crystallized for that operation.

If the fact is as stated, what is the cause? The stems employed in Virginia City are generally made of from 2¼ to 3¼ iron. Those in Grass Valley are usually larger; but the stamp-heads used there are also larger, in about the same proportion. Are the methods of securing the stems to the heads the same in both places? The iron certainly must be of the same quality. We should be pleased to hear from some correspondent who may be fully posted on this matter, both in Virginia City and Grass Valley.



## Mining and Scientific Press.

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## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

**Mr. A. C. Knox,** is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

**San Francisco, Jan 11th, 1866.**

**Mr. L. W. Felton,** is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1865.

**Mr. Geo. P. Fitts** is duly authorized agent for the Mining and Scientific Press. March 23, 1867.

**Mr. S. G. Steele** will act as agent for the Mining and Scientific Press from this date. April 27, 1867.

**Mr. Chas. W. Marlette** is agent for this paper in in Colusa county and vicinity. April 27, 1867.

## San Francisco:

Saturday Morning, April 27, 1867.

## Notices to Correspondents.

**COAL SEEKER, Mt. Diablo.**—The sinking of a shaft in supersaturated loose sand, loam or similar ground, or the driving of a tunnel through the same, is perhaps one of the most difficult operations which the civil engineer is called on to perform. Brunel found this the case in making the Thames tunnel, and hundreds have found the same difficulty in the northern English coal fields when endeavoring to win the sublying carbonaceous prize by first piercing the lowest bed of the new red sandstone. The former surmounted his difficulty by the use of framed boxes, called a shield; the latter attained the same end by what is termed "tubbing" of late years, always composed of iron. The most noteworthy instance of success attending indefatigable perseverance, directed by high theoretical ability of the latter character, occurred on the banks of the Loire, under the direction of M. Triger, where repeated efforts to reach the coal measures through a thick bed of alluvial and water-saturated sand had failed. The mode adopted was to pump into the iron cylinder, which lined the shaft, an amount of air sufficient to produce a pressure on the bottom equivalent to the external pressure of the mud and water. This was accomplished by placing a cover over the upper surface of the cylinder, through which two pipes were inserted, one to convey the compressed air into it, the other dipping into the liquid substratum; by means of the latter, a stream of mud and water was conveyed to the surface when, from any circumstance, its influx could not be prevented by the entrance of the compressed air by the other pipe. In order to enable the workmen to enter and leave their work without disarranging the equilibrium of the forces required for the due working of the apparatus, M. Triger adopted the principle of the canal lock, by fixing an upper chamber in the shaft, in which, when the upper door was closed and the lower one opened, both were filled with compressed air. When the lower one was closed and the upper one opened, the air-lock was closed by the pressure of the sublying column of compressed air. By this means men and materials could easily be, from time to time, introduced without any derangement of the chief operation. M. Triger in this way succeeded in piercing a stratum of flowing soil to the depth of eighty-two feet, thus establishing the fact that human life could not only be supported, but work carried on for several hours at each shift of men, under a pressure of three and a half atmospheres, or fifty-two and a half pounds to the square inch.

**"FARMER," Santa Clara.**—You are right. It is easier to pull a wagon loaded with a ton of hay than it is to pull the same wagon loaded with the same weight of iron over the same road. The philosophy of this may be accounted for from the well known fact that the hay does not rest a dead weight on the axles as the iron does. Its elasticity buoys up and, as it were, "floats" the load over the slight obstructions encountered. The conditions, however, must be a calm atmosphere, as the existence of a high wind might reverse the result, and make the bulky article the heaviest load.

## Foundry and Machine Work.

One of the best evidences of the increase of the foundry and machine work business in this city, is the growth exhibited by the Etna Iron Works (Hanscom & Co.) at the corner of Fremont and Tehama streets. A full year has not elapsed since they were first started, yet a stranger, on visiting them, would suppose that it was an old establishment. Busy hands are seen on all sides, employed on a great variety of work and in every stage of progress, from the original design in the drawing room, through the pattern shop, the molding room, the foundry and the finishing room.

In taking a hasty glance of the works, a few days since, we were pleased to witness these signs of activity and prosperity. Among the work now being turned out at this foundry, we noticed a large amount of architectural castings, for the new Faneuil Hall Market, in process of erection between California and Pine streets, consisting of pilasters, columns, girders, etc., amounting to nearly 150 tons.

An elegant flight of cast iron steps, with ornamental balustrades, for the new Fireman's Fund Insurance Building, now being erected at the corner of California and Sansome streets, and a large quantity of iron work for a block of stone buildings in process of erection by E. H. Sawyer, of Vallejo. This last work, by the way, is among the first of some extensive improvements which have been set on foot in the old State Capital, in anticipation of the early completion of the Vallejo and Marysville railroad, which, it is expected, will be completed to Sacramento by the first of January next.

Among the curiosities at these works is a huge cast iron kettle for Scoville & Co's new candle works at the Mission. This kettle is some six feet in diameter by six feet deep, with perpendicular sides of three feet. Its capacity, we are informed, is, not far from 1,200 gallons. The lower portion of the kettle is made double, the chamber between the walls being used as a steam jacket. The bottom of the kettle is one inch thick, gradually decreasing in thickness to the top of the steam jacket, where it is five-eighths.

We never go into this establishment without seeing a greater or less number of workmen engaged upon Dunbar's piston packing. Of course we did not fail to meet with it again at the time of our recent visit. Our attention was also arrested by a mammoth retort, of a size sufficient to retort one ton of amalgam at a charge. It was being constructed for Trenche's mill, at Silver City. They are also building several newly-invented concentrators for Wheeler & Randall, quite different from anything we have yet seen in that line; also a new amalgamator, recently invented by Mr. Hesse, of this city, which will be known as "Hesse's Centrifugal Amalgamator." We shall notice both of these machines more fully at some other time.

A large number of grate bars are being manufactured here, recently invented by U. S. Boiler Inspector Bemis, and designed especially for facilitating the burning of Mt. Diablo coal. These grate bars are being extensively introduced into use on this coast.

Several of Wheaton's reaping machines are being made here. This is a valuable California invention, and its manufacture here is a sufficient proof that California can manufacture her own agricultural machinery, and invent it, too, if we cannot be allowed to make machinery of Eastern invention. The home manufacture of agricultural implements would save to this State, and for our mechanics, an immense sum of money every year.

There is another hunky article of manufacture for which we are annually sending hundreds of thousands of dollars out of the State. We allude to stoves of various patterns. We were pleased to see a large number of Tay, Brooks & Backus' Monitor stoves in process of manufacture; also the petroleum stoves, such large numbers of which are now being introduced into

this city. These stoves were at first imported; they are now being made here, as all other stoves should be.

Among the economical and progressive features we noticed first, was a mechanical arrangement for separating the earthy matter from the furnace slags, by which the usual melting loss of not less than five per cent. of the total amount of iron which goes into the cupola is saved at a trifling cost. The noisy fan-blowers, which keep up such a deafening humming in most foundries, has been replaced here by Root's Blower, a late Eastern invention, which not only works almost noiselessly, but also effects a saving of about one-third in power. This is a very ingenious and perfect machine, but difficult of description without an illustration.

They are also using one of Carvalho's Superheaters, which may be easily attached to almost any boiler in use. Its employment admits of the use of a much less pressure of steam to do the same work, thus lessening the danger of explosion and saving fuel. It is perfectly under control, and is safe as an ordinary steam conducting pipe. The superheaters are manufactured at this foundry. We shall endeavor to describe them in a future number.

**CEMENT WORKING.**—Mr. A. J. Hunter recently visited the cement mill at Wisconsin Hill, Placer county, near Iowa Hill, for the purpose of putting four of his concentrators into that mill. The company had become satisfied that they were losing gold, but attributed the loss to its extreme fineness and "rusty" condition. Mr. Hunter found that they were using screens with one-eighth inch holes, and suggested a trial with finer screens. In order to ascertain more satisfactorily the value of such a change, several tons of cement were put through the battery as it stood, battery amalgamation and copper plates being used. The sulphurets were concentrated on blankets, in the manner usually adopted in quartz working, and afterwards submitted to a careful pan working. The result was that eighteen per cent. of the gold was obtained from the battery and plates and eighty-two per cent. from the pan.

The old screens were now removed, and new ones, with about one thirty-second of an inch holes, substituted. The result of the change was, that ninety-nine per cent. of all the gold was found in the battery. The tailings (saved by blankets as before) showed but a mere trace of gold by either the pan process or a fire assay.

These results are certainly very remarkable, and well worth recording, although they are doubtless quite exceptional cases, as the gold in this claim is exceedingly fine for cement gold.

A panful of tailings was caught from the waste sluice of a neighboring cement mill, about half a mile distant, and carefully washed down for such free gold and sulphurets as it might contain. This concentration yielded only \$1.50 to the ton. The screens at this mill are about one-sixteenth of an inch in diameter, and the gold is coarse and more easily saved than that from the Wisconsin Hill claim, which must chiefly account for the difference in the value of the waste sands from the two mills.

These experiments are very interesting and valuable. Perhaps one of the most important items of interest connected with them are the facts that the sulphurets from these claims are not auriferous, while it is pretty well established that the sulphurets from some of the cement claims are valuable, especially from those in and about You Bet.

**THE WINE CULTURE IN CALIFORNIA.**—H. H. Bancroft & Co., the publishers, have sent us a copy of this little pamphlet. Henry Gihbons, M. D., is the author. It takes the ground that alcohol is poison, whether in wine or anything else; and insists that the idea of promoting temperance by substituting wine for strong drinks, is "fraught with danger."

**CANADA GOLD MINES.**—It is said that the arrival of gold-hunters at Madoc numbered hundreds in one day. The prospects are good. Claims are sold at high prices.

## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**A WATCH WITHOUT HANDS,** that shows on its face no figures but those which tell the hour and minute looked for, has recently been invented in London by a Mr. Barlow. The figures are displayed as they are wanted, and no others appear on the watch face.

**A NEW RESPIRING APPARATUS,** designed for use by firemen at fires, has been invented by Andrew Gullibert, of Paris, France. The apparatus consists of a flexible bag, containing twenty-five gallons of air, fastened to the back firmly, with the tube to the mouth. One of the machines was recently tried at Chicago, and pronounced entirely satisfactory, the operator remaining over fifteen minutes in the midst of dense smoke. It is believed it will be a very valuable invention.

**AN ELECTRICAL BURGLAR ALARM.**—Mr. G. Kellogg, of Oakland, has invented an instrument which he calls an electrical burglar alarm. It is so contrived that whenever a burglar attempts to enter a house the instrument gives instant notice to the police, giving the name of the street and number of the house in which the thief is operating. A caveat has been filed, preliminary to taking steps to secure a patent for the invention.

## PATENTS RECENTLY ISSUED.

62,983.—**MACHINE FOR CONCENTRATING ORES.**—Thos. Varney, San Francisco. I claim, 1st, The use of the disk, A, divided into compartments.

2d, The trough, B, all constructed in the manner and for the purposes set forth.

The above invention relates to the Varney Separator, which has already been described in our columns.

63,086.—**IMPROVEMENTS IN ADJUSTABLE HANDLES FOR FRUIT BOXES.**—Cary Peebels, Santa Clara county, Cal.

I claim a handle, A, constructed with the arms, b b, and prongs, c c, similar to that herein described, substantially as and for the purpose set forth.

The object of the above invention is to provide an adjustable handle for strawberry boxes to be used in picking the fruit, so constructed as to clasp the boxes and hold it until filled, after which it can be easily detached and applied to another box. The necessity for such an invention will be found apparent, from the fact that berries, especially strawberries, should be sent to market in the same boxes in which they are gathered, on account of the necessity of preserving the berries perfect, which cannot be where the necessity exists for rehandling and repacking. In most cases strawberry boxes are round or square, with no convenient handle or arrangement for holding, except by clamping by the thumb upon the top or edge of the box, with the fingers placed underneath for support, which soon becomes very tedious and wearisome for the hand; and in no case can more than one hand be employed at the same time. By the use of this invention, the box can be so attached to the body that both hands may be employed in picking the berries.

62,602.—**SHAKING TABLE FOR CONCENTRATING ORES.**—P. S. Buckminster, Gold Hill, Nevada.

I claim the rifles, h, b, running diagonally across the bed of a shaking table in combination with spring, e, e, at one end and the adjustable slides, d, d, for concentrating gold and other ore, arranged and operating substantially as herein described.

62,619.—**COMPOSITION FOR ROOFING.**—G. L. and H. Egan, San Francisco, Cal.:

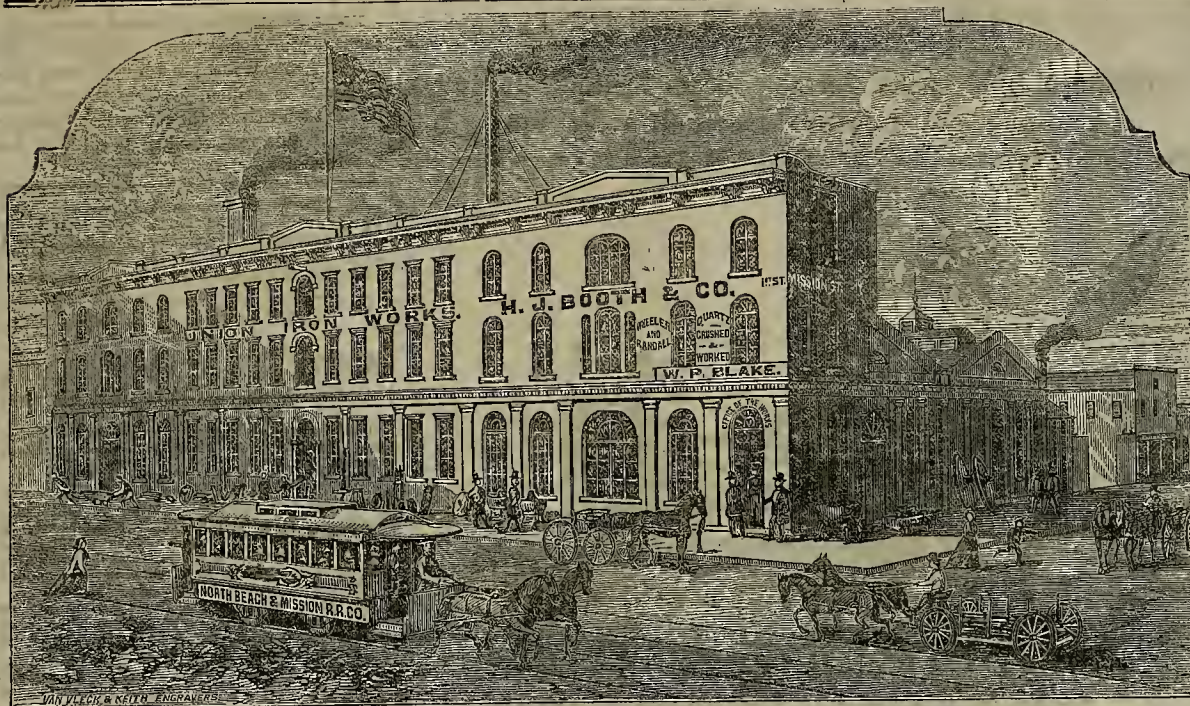
We claim the composition of the manufacture of drain-pipes, molding, roofing, etc., the ingredients of which are prepared and combined in the proportion and manner substantially as herein described.

**DRY DOCK.**—The contract for the iron work on the new dry dock has been awarded to the Vulcan Foundry. It includes two high-pressure engines, with 22-inch cylinders and four foot stroke; four hoilers, of best American iron, sixteen-feet long and fifty-four-inches in diameter, and large centrifugal pumps capable of throwing 150 tons of water per minute. The work is to be completed in ninety days.









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**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

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**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

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**STEAM ENGINES AND QUARTZ MILLS.**  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing,**

Requires no springs or screws; is always steam tight;  
without excessive friction, and never  
gets slack or leaky.

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**NEW GRINDER AND AMALGAMATOR**

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**AMALGAMATOR AND SEPARATOR,**

**Tyler's Improved Water Wheel,**

Giving the greatest power, at lower cost, than any  
Wheel in use. There are over 1,500 running,  
giving universal satisfaction.

**KNOX'S AMALGAMATORS,**

**WITH PALMER'S PATENT STEAM CHEST,**

Superior for working either Gold or Silver Ores.

**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz  
mining and being conversant with all the improvements,  
either in Mining or Milling, we are prepared to furnish,  
at the shortest notice, the most perfect machinery for reducing  
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**And all kinds of Mining Machinery.**

Also, Hay and Wine Presses made and repaired  
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**Dunbar's Patent Self-Adjusting Steam Piston**

**PACKING,** for new and old cylinders, manufactured  
to order.

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Pick Manufacturer,

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Particular attention is called to his RAISED EYE  
QUARTZ PICK, which is especially adapted to Quartz Min-  
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**REPAIRED.**

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Of all sizes, constantly on hand; Quartz Mill Shoes and  
Dies warranted to be made of the best white iron.

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**Packing,** requires no springs or screws; is always steam-  
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leaky.

**MACHINERY, OF ALL DESCRIPTIONS**

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Castings, Brass Ship Work of all kinds, Spikes, Sheathing  
Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and  
Gongs of superior tone. All kinds of Cocks and Valves, Hy-  
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J. O. HANSCOM } **HANSCOM & CO.,** { T. FENDERGAST.  
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**Dunbar's Improved Self-Adjusting**

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quires no springs or screws; is always steam-tight; without  
excessive friction, and never gets slack or leaky.

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The best of the kind now in use in this State or anywhere else

**Wheeler & Randall's New Grinder and**

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Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use

Sold for one of our circulars, giving full tables

All Wheels warranted to give the power as set forth, or  
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**White Iron Stamp Shoes, and Dies.**

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**Improved Crusher, Mining Pumps,**

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**HIGH PRESSURE**

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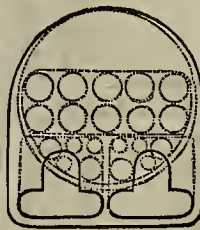
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tested by U. S. Boiler In-  
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the Shop, at Shop expense.

All kinds of Sheet Iron and  
Water Pipe, Coal Oil  
Stills, Wrought Iron  
Worms, etc., etc.  
Manufactured to Order.

**Old Boilers Repaired**

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6v12-ly

**ANOTHER SWINDLE.**—The Virginia City *Trespass* publishes a letter lately received by the Postmaster of that place from Warren, Pennsylvania, making these inquiries: First, whether there is such a mining company as the Mount Vista Gold and Silver Mining Company, of Humboldt county, Nevada. Second, whether the company is working the mine. Third, were any dividends ever declared. Fourth, has the company any machinery, such as engines, stamps, etc.

The *Trespass* takes upon itself the replying to these questions: "In the spring of 1864 a Frenchman, who said his name was Petite, located a piece of excellent garden ground on the north slope of a spur of the Humboldt Mountains, half a mile distant from Unionville, the shire town of Humboldt county. This location he styled the Mount Vista Gold and Silver Mining Company, and the same was duly recorded in the books of the Register of that district. Interrogatory second: 'Is the company working the mine?' Answer—Petite left the sum of \$8 coin, with which to develop the lode. A miner ran a cut in the rich soil about six feet, it taking said miner two days to accomplish the work, for which he received his regular \$4 per diem, miner's wages in Nevada. Since that hour the claim has never been disturbed. Third interrogatory: 'Have the company ever declared any dividends?' Answer—Some two years since Capt. Warner (the Postmaster) received a letter from the Secretary of the company, then in New York, enclosing him a piece of the stock, and quietly informing him that if he (Warner) would send to New York representations favorable to the mine, a large amount of money could be made, of which Warner should receive his share. Warner did not answer the letter, but we have learned that a dividend has been declared by the company of 1 1/2 per cent on the capital stock, and paid to a few stool-pigeons and suckers who held stock in the Mount Vista, in order to make a showing on Wall or Chestnut streets. To the question whether the company has engines, stamps, etc. We answer—We never heard of it having an engine; certainly never in Nevada; but if it has found a sufficient number of fools in the East, it is more than probable it has got 'stamps' and is doing well."

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Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better

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In this City,

**536** Try them

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**CLERC & CO.,**

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8v146m

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**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to  
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All work done guaranteed. 15v14-17

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**Steam Engine Works,**

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**STEAM ENGINES OF EVERY DESCRIPTION BUILT**

**TO ORDER—Marine, Stationary, or Locomotive.**

**HOISTING AND PUMPING ENGINES,**

**PORTABLE ENGINES, OF ALL SIZES,**

**DONKEY PUMPS, Etc., Etc., Etc.**

The attention of the parties engaged in shipping or inland  
navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San  
Francisco for the last fourteen years, and enjoys the repu-  
tation of having built ONE HUNDRED AND SEVENTEEN

**STEAM ENGINES**

Screw Propellers of all kinds, and Steam Boat Machinery  
generally, made to order, and warranted to give perfect  
satisfaction in every particular. 25v123m



**PACIFIC PEARL COMPANY.**—A company has been formed in New York, under this name, for the purpose of pearl fishing at the Pearl Islands, about sixty miles from Panama. They will have a submarine boat, so constructed as to be capable of carrying ten or twelve men, and of being lowered or hoisted at will. Trap doors at the bottom can be opened, allowing a space of ten feet square in which to work.

DURING last year, the lead pipe and shot works of Thos. H. Selby & Co. turned out over 200 tons of shot, 350 tons of sheet lead, 400 tons of lead pipe and 50 tons of miscellaneous articles, minnie bullets, weights, etc.

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**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Corawall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, is free for examination or superintendence of Mineral Properties, in consequence of his condemnation and immediate abandonment of those operations.  
Reference—B. W. Menzies, 523 Clay street, San Francisco.  
Humboldt City, Nevada. 6v14-6m

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WE are receiving direct from MESSRS. LADD & OERT, LINO (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

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THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$3 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents 2v12 F. E. WEYGANT, Proprietor.

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ASSESSMENT RECEIPTS,**

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## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

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**A. S. CHURCH. S. B. CLARK.**  
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IMPORTERS AND DEALERS IN  
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FRUITS, NUTS, CONFECTIONERY, Etc.,  
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Printed list of kinds and prices furnished. *—* 15v14-6m12p

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**C. E. COLLINS,**  
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**EXCLUSIVE AGENT**  
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**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
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The American Company are now making  
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IMPROVED NOISELESS  
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Challenges the world. It has beaten the Florence badly Come and see it, or send for Report of the trial.  
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"YACHT HENRIETTA."  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
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12v14-6m

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THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Bells of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD, J. H. MACDONALD, HOWARD CHAPMAN, San Francisco, Feb. 1, 1867. 12v13-3m

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**HOWLAND, ANGELL & KING,**  
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**Steam Engines of all Kinds.**  
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**MINING PUMPS, HOISTING WORKS,**  
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Machinery and Castings of all kinds, either of Iron or Brass.  
Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

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13v14-qr

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13v11

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**LOCKE & MONTAGUE,**

HAVE A FULL STOCK OF  
**Large Cooking Stoves,**  
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**HEALY'S CURATIVE OIL, FOR THE SURE AND** speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism? Use Healy's Curative Oil! Have you the Headache? Use Healy's Curative Oil! Have you a Sore Throat? Use Healy's Curative Oil! Have you the Toothache? Use Healy's Curative Oil! Are you subject to Cramps? Use Healy's Curative Oil! And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless the fac simile signature of FRANK HEALY is on the outside wrapper of the bottle.  
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OVER FIFTEEN THOUSAND MEMBERS!  
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ALL PROFITS  
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Dividend Jan. 1st, 1867, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
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9v14qrftic12p

## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.

CAPITAL STOCK, --- \$500,000

Trustees:

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THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office only for Chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the ad-  
vantages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14 3m

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## THE PENINSULAR AND ORIENTAL

STEAM NAVIGATION COMPANY'S  
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Leave Hongkong Twice a Month,

On the 1st and 15th in the Northeast Monsoon,  
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Calling at Singapore, Penang,  
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From Point de Gallo their steamers run to Madras,  
Calcutta, and Bombay, twice a month, and once a month  
to King George's Sound, Melbourne and Sydney.

From Hongkong their steamers run constantly to  
Swatow, Amoy, Foochow, Shanghai, and Yokohama.  
Hongkong, 1867. 13v14tf

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We have lately associated with us in the Patent and Me-  
chanical Department of the Mining and Scientific Press, a gen-  
tleman of superior ability and attainments, who has ar-  
rived direct from the leading patent agency in New York  
city, and having faithful and reliable associates in Wash-  
ington City, we are now better than ever before prepared  
to secure the claims of our applicants, in a careful, prompt  
and efficient manner.  
San Francisco, Jan. 1867. DEWEY & CO.,  
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tific Press is the best and most economical mining adver-  
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half the rates now charged by daily newspapers, and the  
mining community are beginning to appreciate our reasona-  
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Metallurgists and Mining Engineers

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Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

G. W. MAYNARD. J. H. TIEMANN.  
MAYNARD & TIEMANN,  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
19v12-1y

## EUROPEAN METALLURGICAL WORKS,

—AND—  
Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE PROPRIETORS are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphur, pyrites, and the (so-called) "rebel-  
lous ores," are having especial attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, reducing by cupellation, done at moderate rates.

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The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting,  
refining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.

S. P. KIMBALL,

J. R. MURPHY.

10v10

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## Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that the  
nature of the ore may require.

Practical Instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphur.

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J. MOSHEIMER,  
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## Chemical Laboratory,

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Careful Analyses made of

Ores, Minerals, Waters, Oils, Liquors,  
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Opinions given on Chemical Questions and Geology.  
Particular attention paid to Analyses of all kinds, in  
cases where legal questions are involved.

Pure Nitric Acid, Nitrate of Silver, Gold Chloride, Platin  
Chloride, Sodium Amalgam, Sulphate of Copper, etc., for  
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Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
steady and successful experience in working ore in Washoe,  
and is practiced in saving sulphur and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz operator. Address: F. M. SEAW.  
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## FACTORY,

Townsend street, between Third and Fourth

THESE WORKS (WHICH HAVE BEEN TEMPORARILY  
stopped for repairs) are now in operation, and are pre-  
pared to fill orders for every description of

### HOLLOW WARE GLASS,

All sizes of German Flint Prescription Vials, Fluted Pack-  
ers' Ovals, Extracts, Panels, Mustards, Sodas, Preser-  
vers' Wino Bottles, etc., etc. Chemists' Glass Ware, Re-  
ports, Flasks, Funnels, Syphons, Tubing, etc., etc. Lamp  
Chimneys of every size and description, equal in quality to  
the best imported.

Private Molds made and lettered to order at short  
notice.

NEWMAN & BRANNAN,  
Proprietors.

13v14-1m

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BARTLING & KIMBALL,  
BOOK BINDERS,  
Paper Rulers and Blank Book Manufacturers.  
505 Clay street, (southwest cor. Sansome),  
15v12-3m SAN FRANCISCO.

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(SUCCESSOR TO O. GOR)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Mantels, Monuments, Tombs, Plumbers' Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
spectedly solicited. 5v8-3m

NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Burial Caskets and Cases,  
11v

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Maker of Models for Inventors.  
MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
LOSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair  
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ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
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SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L.  
AXLE GREASE,  
Natoma Street and North Beach,  
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2v13-3m

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Established 1849.

C. NUTTING,  
Manufacturer of  
Fire-Proof Doors and Shutters,  
BANK VAULTS, PRISON CELLS, BALCONIES, AWN-  
INGS, GRATINGS, IRON FENCE, STAIRS, Etc.,  
123 Bush street,  
11v14-1q San Francisco.

LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

M. M. COOK & SON,  
No. 601 Battery street,  
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## SAN FRANCISCO Cordage Manufactory!

CONSTANTLY ON HAND A LARGE ASSORTMENT

## MANILA CORDAGE,

Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.

Office, at TURBS & CO'S, 611 and 613 Front street.  
Manufacture at the Potrero. 11v14-1q

CARDS \$3  
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LOOKING-GLASS  
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Plumbers and Gas-Fitters,  
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Adjoining R. C. Orphan Asylum, nearly opp. Monty's street,  
SAN FRANCISCO.  
BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
19v13-2q

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GOLD QUARTZ MINE, SITUATED IN CALAVERAS  
County, with steam mill fitted up with Amalgamating  
Pans, etc., FOR SALE. The mine has three main veins, and  
more than \$30,000 have been spent in opening them and com-  
pleting the mill. Good wagon roads all the way. Apply to  
BELLOC FRERES, Bankers,  
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23v13-6m

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mail to any part of the civilized world. In case of removal  
subscribers have only to inform us of the post office address  
of their old and new location, and the paper will be sent  
accordingly.

## TO VICTIMS OF RHEUMATISM IN ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH  
this terrible and excruciating disease, that the means  
of a safe, speedy and permanent cure are within the reach  
of every sufferer, by using

**RICHARDS' REMEDY!**  
For Inflammation, Chronic, Hereditary and Mercurial  
Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all  
the modifications of the disease, whether confined to one  
portion of system or erratic in their character. Composed  
wholly of VEGETABLE EXTRACTS, it exterminates the  
complaint without injuring the constitution. None but the  
TORTURED SUFFERERS who have been relieved from their  
agony by the operation of this remedy, can realize the  
ecstasy which the mere cessation of long-continued tor-  
ment imports. Sleep returns, strength returns, health and  
hope return to the pain-worn and debilitated patient, and  
once cured, nothing but the grossest imprudence can lead  
to a relapse. The confidence with which these statements  
are made to the public, is the result of many years' ex-  
perience. The reputation of mere pain-  
killers is not what a SWEETENING MEDICINE,  
which produces, year after year, in all cases, the same ben-  
eficial effects, NEVER DIES. This has been the history of  
Richards' Remedy. Try it!  
3v8-1m  
H. BOWMAN, Druggist, Sacramento,  
Aud by Druggists generally.

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## Fine Custom Made Clothing

—AND—

Gents' Furnishing Goods

AT PRICES THAT DEFY COMPETITION.

Our Stock of Clothing Complete of  
ALL THE LATEST STYLES

BOTH OF MATERIAL AND FINISH.

A Large Assortment of

Trunks, Valises, Carpet Bags, Blankets, Etc.,

AT EXTREMELY LOW PRICES.

J. R. MEAD & CO.,  
Cor. of Washington and Sansome streets.  
8v10

## New Mining Advertisements.

De Soto Gold and Silver Mining Company.—  
Location of Works: Star District, Humboldt County,  
State of Nevada.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twentieth day of  
April, 1867, an assessment of sixty cents per share was  
levied upon the capital stock of said Company, payable  
immediately, in United States gold and silver coin, to the  
Secretary, at the Office of the Company, No. 58 Exchange  
Building, northwest corner of Montgomery and Washington  
streets, San Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the first day of June, 1867, shall be deemed delin-  
quent, and will be duly advertised for sale at public auc-  
tion, and unless payment shall be made before, will be  
sold on Wednesday, the nineteenth day of June, 1867, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trustees,  
JOHN M. BURNETT, Secretary.

Office, No. 63 Exchange Building, northwest corner of  
Montgomery and Washington streets, San Francisco, Cal.  
ap27

Gold Quarry Company. Location of Works:

Placer County, State of California.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
21st day of March, 1867, the several amounts set opposite  
the names of the respective shareholders, as follows:

Names	No. Certificate.	No. Shares.	Amount.
George Atwood.....	14	100	\$2 00 10
James Freeborn.....	18	50	1 00 00

And in accordance with law, and an order of the Board of  
Trustees, made on the 21st day of March, 1867, so many  
shares of each parcel of said stock as may be necessary,  
will be sold at public auction, by Cobb & Sinton, auction-  
eers, at the office of the Company, 706 Montgomery street,  
(Room No. 4) San Francisco, Cal., on Monday, the thir-  
teenth day of May, 1867, at the hour of 11 o'clock, A. M.  
of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.  
Office Room No. 4, 706 Montgomery street, San Fran-  
cisco, Cal. ap27

Hanson Copper Mining Company. Location:

Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the fourth (4th) day  
of March, 1867, an assessment of ten cents (10c) per  
share was levied upon the capital stock of said Company,  
payable immediately in United States gold and silver coin,  
to the Secretary, 609 Market street, San Francisco, Cal.

Any stock upon which said assessment shall remain  
unpaid on the fourth (4th) day of April, 1867, shall be  
deemed delinquent, and will be duly advertised for sale  
at public auction, and unless payment shall be made before,  
will be sold on Monday, the twenty-second day of April,  
1867, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees,  
S. S. SWEET, Secretary.

Office, No. 609 Market street, San Francisco, Cal. ap27

POSTPONEMENT.—The day for deemed stock delinquent on  
the above assessment is hereby postponed until the third day  
of May, 1867, and the sale thereof until Monday, the twen-  
tieth day of May, 1867. By order of the Board of Trustees,  
JOHN HANSCOM, Secretary.

Office, at the Alamo Iron Works, Fremont street, between  
Howard and Folsom, San Francisco. ap27

X. X. L. Gold and Silver Mining Company.—Loca-

tion: Silver Mountain District, Alpine County, Cal.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-fifth day of  
April, 1867, an assessment of three dollars (\$3) per share was  
levied upon the capital stock of said Company, payable  
immediately in United States gold and silver coin, to the  
Secretary, at his office, in the store of J. G. Dodge & Co.,  
418 and 420 Clay street, San Francisco, Cal., or to John G.  
Slattery, at Silver Mountain, Del Norte County, Cal.

Any stock upon which said assessment shall remain un-  
paid on the twenty-fifth (25th) day of May, 1867, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the tenth day of June, 1867, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trustees,  
S. R. STEVENS, Secretary.

Office, 418 and 420 Clay street. ap27



**Dividend Notice.**—San Francisco, April 26th, 1867.—At a meeting of the Trustees of the GOLDEN RULE MINING COMPANY, of Tuolumne County, Dividend No. 5 was this day declared of Fifty Cents per share, and made payable at the office of the Company and after the first day of May, 1867.

J. B. RUSSELL, Secretary.  
Office, No. 5, over Donohoe & Kelly's Bank, southeast corner Sacramento and Montgomery streets. ap27-1

**North Star Gold and Silver Mining Company.**  
Recess River Mining District, Lander County, Nevada.  
Notice.—There are delinquent, upon the following described stock, an account of assessment levied on the fourteenth day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
T. E. Lumberger	51	1	\$ 5.00
W. B. Cummings	52	1	5.00
Joseph A. Brown	53	1	5.00
Alex. Weill	54	2 1/2	12.50
Salomon Haus	55	5	25.00
Chas. J. Dreyer	56	1	5.00
Geo. H. Faulkner	57	5 1/2	27.50
Oliver Ames	58	25	125.00
Oliver Ames	59	50	250.00
Oliver Ames	60	10	50.00
Oliver Ames	61	10	50.00
John Kirtz	62	10	50.00
Cyrus Lathrop	63	400	2000.00
Jerome W. Tyler	64	10	50.00
Jerome W. Tyler	65	10	50.00
Jerome W. Tyler	66	10	50.00
Jerome W. Tyler	67	10	50.00
Jerome W. Tyler	68	10	50.00
Jerome W. Tyler	69	10	50.00
Jerome W. Tyler	70	10	50.00
Jerome W. Tyler	71	10	50.00
Jerome W. Tyler	72	10	50.00
Jerome W. Tyler	73	10	50.00
Jerome W. Tyler	74	10	50.00
Jerome W. Tyler	75	10	50.00
Jerome W. Tyler	76	10	50.00
Jerome W. Tyler	77	10	50.00
Jerome W. Tyler	78	10	50.00
Jerome W. Tyler	79	10	50.00
Jerome W. Tyler	80	10	50.00
Jerome W. Tyler	81	10	50.00
Jerome W. Tyler	82	10	50.00
Jerome W. Tyler	83	10	50.00
Jerome W. Tyler	84	10	50.00
Jerome W. Tyler	85	10	50.00
Jerome W. Tyler	86	10	50.00
Jerome W. Tyler	87	10	50.00
Jerome W. Tyler	88	10	50.00
Jerome W. Tyler	89	10	50.00
Jerome W. Tyler	90	10	50.00
Jerome W. Tyler	91	10	50.00
Jerome W. Tyler	92	10	50.00
Jerome W. Tyler	93	10	50.00
Jerome W. Tyler	94	10	50.00
Jerome W. Tyler	95	10	50.00
Jerome W. Tyler	96	10	50.00
Jerome W. Tyler	97	10	50.00
Jerome W. Tyler	98	10	50.00
Jerome W. Tyler	99	10	50.00
Jerome W. Tyler	100	10	50.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 423 Front street, San Francisco, Cal., on the fifteenth day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEORGE H. FAULKNER, Secretary.  
Office, 423 Front street, San Francisco, Cal. op27

**Rippon Gold and Silver Mining Company.**  
Silver Mountain District, Alpine County, California.  
Notice is hereby given that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on MONDAY, the twenty-seventh day of May, 1867, at 12 o'clock P. M., at No. 302 Montgomery street, Room No. 10, San Francisco, California. By order of the President.

CURTIS PALMER, Secretary.  
Office, 302 Montgomery street, Room 10. ap27

N. B.—An order was made annulling the assessment levied on the eighth of May, 1866. Persons who had said assessment will be credited on this. By order of the Board of Trustees.  
CURTIS PALMER, Secretary.  
San Francisco, April 22, 1867. ap27

**Rattlesnake Gold and Silver Mining Company.**  
Brown's Valley, Yuba County, California.  
Notice.—There are delinquent upon the following described stock, an account of assessment levied on the 22d day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Leland, G. H.	25	10	\$10.00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, 404 Montgomery street, San Francisco, Cal., on Monday, the 13th day of May, 1867, at the hour of 12 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, ap-stairs, San Francisco. ap27

**Postponements and Alterations.**—Secretaries are requested to give notice of postponements, or alterations which they may desire make in their advertisements in their earliest convenience. Now advertisements should be sent in as early as possible.

## Mining Notices—Continued.

**Arizona Consolidated Mining Company, Earleka District, Arizona Territory.**

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, will be held on MONDAY, the sixth day of May, 1867, at 7 o'clock P. M., at the office of the Secretary, 511 Clay street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.  
G. W. BUNNELL, Secretary.  
Office, No. 511 Clay street, San Francisco. ap20

**Adella Gold Mining Company, Rock Creek, Sierra County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of April, 1867, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. G. Taylor, No. 429 Pacific street, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the ninth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twelfth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
A. G. TAYLOR, Secretary.  
Office, No. 429 Pacific street, San Francisco. ap13

**Batoplas Mining Company, Batoplas District, State of Chihuahua, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of April, 1867, an assessment (No. 3) of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 811 Montgomery street, up stairs, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the sixteenth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
A. MARTIN, Secretary.  
Office, 811 Montgomery street, up stairs, San Francisco. ap13

**Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.**

Notice.—There are delinquent, upon the following described stock, an account of assessment levied on the nineteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bailey, J. H.	137	5	\$25.00
Calvert, William	138	5	25.00
Calvert, William	139	3	15.00
Crandell, O. L.	140	10	50.00
Crandell, O. L.	141	10	50.00
Crandell, O. L.	142	10	50.00
Crandell, O. L.	143	10	50.00
Crandell, O. L.	144	10	50.00
Crandell, O. L.	145	10	50.00
Crandell, O. L.	146	10	50.00
Crandell, O. L.	147	10	50.00
Crandell, O. L.	148	10	50.00
Crandell, O. L.	149	10	50.00
Crandell, O. L.	150	10	50.00
Crandell, O. L.	151	10	50.00
Crandell, O. L.	152	10	50.00
Crandell, O. L.	153	10	50.00
Crandell, O. L.	154	10	50.00
Crandell, O. L.	155	10	50.00
Crandell, O. L.	156	10	50.00
Crandell, O. L.	157	10	50.00
Crandell, O. L.	158	10	50.00
Crandell, O. L.	159	10	50.00
Crandell, O. L.	160	10	50.00
Crandell, O. L.	161	10	50.00
Crandell, O. L.	162	10	50.00
Crandell, O. L.	163	10	50.00
Crandell, O. L.	164	10	50.00
Crandell, O. L.	165	10	50.00
Crandell, O. L.	166	10	50.00
Crandell, O. L.	167	10	50.00
Crandell, O. L.	168	10	50.00
Crandell, O. L.	169	10	50.00
Crandell, O. L.	170	10	50.00
Crandell, O. L.	171	10	50.00
Crandell, O. L.	172	10	50.00
Crandell, O. L.	173	10	50.00
Crandell, O. L.	174	10	50.00
Crandell, O. L.	175	10	50.00
Crandell, O. L.	176	10	50.00
Crandell, O. L.	177	10	50.00
Crandell, O. L.	178	10	50.00
Crandell, O. L.	179	10	50.00
Crandell, O. L.	180	10	50.00
Crandell, O. L.	181	10	50.00
Crandell, O. L.	182	10	50.00
Crandell, O. L.	183	10	50.00
Crandell, O. L.	184	10	50.00
Crandell, O. L.	185	10	50.00
Crandell, O. L.	186	10	50.00
Crandell, O. L.	187	10	50.00
Crandell, O. L.	188	10	50.00
Crandell, O. L.	189	10	50.00
Crandell, O. L.	190	10	50.00
Crandell, O. L.	191	10	50.00
Crandell, O. L.	192	10	50.00
Crandell, O. L.	193	10	50.00
Crandell, O. L.	194	10	50.00
Crandell, O. L.	195	10	50.00
Crandell, O. L.	196	10	50.00
Crandell, O. L.	197	10	50.00
Crandell, O. L.	198	10	50.00
Crandell, O. L.	199	10	50.00
Crandell, O. L.	200	10	50.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1867, at the hour of 12 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. op27

**Postponement.**—The above sale is hereby postponed until Wednesday, the twenty-second day of May, 1867, at the same hour and place. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
Office, 302 Montgomery street, San Francisco. op27

**Chilpaneca Mining Company—District of Ures, Sonora, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of March, 1867, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 518 California street, up stairs, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the third day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twelfth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 518 California street, San Francisco. ap13

**Illegal Supplemental Advertising.**—It would be well for Mining Companies, whose advertisements are repeatedly appearing in the Supplements of daily papers, to inquire into the legality of that class of advertising.

**Camargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice.—There are delinquent upon the following described stock, an account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Camp, Jas.	6	3	\$15.00
Drinkwater, A.	7	3	15.00
Drinkwater, A.	8	3	15.00
Drinkwater, A.	9	3	15.00
Drinkwater, A.	10	3	15.00
Drinkwater, A.	11	3	15.00
Drinkwater, A.	12	3	15.00
Drinkwater, A.	13	3	15.00
Drinkwater, A.	14	3	15.00
Drinkwater, A.	15	3	15.00
Drinkwater, A.	16	3	15.00
Drinkwater, A.	17	3	15.00
Drinkwater, A.	18	3	15.00
Drinkwater, A.	19	3	15.00
Drinkwater, A.	20	3	15.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

**Dordaneles Copper Mining Company, Low Divide District, Del Norte County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held at Crescent City, on the sixteenth day of March, 1867, an order was made annulling the assessments levied February 23rd, 1864, April 7th, 1865, August 2nd, 1865, and June 2nd, 1866, and levying an assessment of forty five (45) cents per share upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary at Crescent City, California.  
Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fourth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
C. G. CUKTIS, Secretary.  
Office, at Woodbury & Markoff, Crescent City, California. ap6

**Dianna Gold and Silver Mining Company, Lander County, Nevada.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of March, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately in United States Currency, to the Secretary, San Francisco, California.  
Any stock upon which said assessment shall remain unpaid on the third day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the fourth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

**Evoca Consolidated Copper Mining Company.**  
Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on THURSDAY, the twenty-third day of May, 1867, at 3 o'clock P. M., at No. 532 Market street, Room No. 3, San Francisco, California. By order of the President.

R. S. CLYDE, Secretary.  
my44w

**George Washington Gold and Silver Mining Company.**—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 18.  
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of April, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.  
Any stock upon which said assessment shall remain unpaid on the eleventh day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
A. G. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. ap9

**Hope Gravel Mining Company.**—Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of April, 1867, an assessment (No. 14) of one dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to Davin Wilson, Secretary, at the office of the Company, No. 523 Clay street, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the twenty-second day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
DAVID WILDER, Secretary.  
Office, No. 523 Clay street, San Francisco. Cal. my20

**Keystone Mining Company.** Location of Works: Copperopolis, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of February, 1867, an assessment of ten dollars (\$10) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, No. 440 California street, San Francisco, California.  
Any stock upon which said assessment shall remain unpaid on Monday, the twenty-ninth day of April, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twelfth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
G. P. SUTTON, Secretary.  
Office, 440 California street, San Francisco. m9

**Lyo Mill and Mining Company, Kelsey District, El Dorado County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of April, 1867, an assessment of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid on the fourth day of May, 1867, will be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fifteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.  
J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner of Washington and Sansome streets. ap6

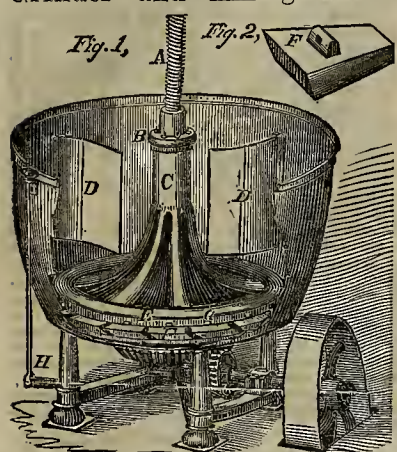
**Nuestra Seccora do Gandelupio Silver Mining Company.** Location of Works: Tayolita, San Dimas District, Durango, Mexico.

Notice.—There are delinquent, upon the following described stock, an account of assessment levied on the fifteenth day of March, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H. Bruening.	96	2	\$ 2 00
Wm Gelmann.	97	5	5 00
Wm Gelmann.	98	10	10 00
Wm Gelmann.	99	10	10 00
Wm Gelmann.	100	10	10 00
Wm Gelmann.	101	10	10 00
Wm Gelmann.	102	10	10 00
Wm Gelmann.	103	10	10 00
Wm Gelmann.	104	10	10 00
Wm Gelmann.	105	10	10 00
Wm Gelmann.	106	10	10 00
Wm Gelmann.	107	10	10 00
Wm Gelmann.	108	10	10 00
Wm Gelmann.	109	10	10 00
Wm Gelmann.	110	10	10 00
Wm Gelmann.	111	10	10 00
Wm Gelmann.	112	10	10 00
Wm Gelmann.	113	10	10 00
Wm Gelmann.	114	10	10 00
Wm Gelmann.	115	10	10 00
Wm Gelmann.	116	10	10 00
Wm Gelmann.	117	10	10 00
Wm Gelmann.	118	10	10 00
Wm Gelmann.	119	10	10 00
Wm Gelmann.	120	10	10 00
Wm Gelmann.	121	10	10 00
Wm Gelmann.	122	10	10 00
Wm Gelmann.	123	10	10 00
Wm Gelmann.	124	10	10 00
Wm Gelmann.	125	10	10 00
Wm Gelmann.	126	10	10 00
Wm Gelmann.	127	10	10 00
Wm Gelmann.	128	10	10 00
Wm Gelmann.	129	10	10 00
Wm Gelmann.	130	10	10 00
Wm Gelmann.	131	10	10 00
Wm Gelmann.	132	10	10 00
Wm Gelmann.	133	10	10 00
Wm Gelmann.	134	10	10 00
Wm Gelmann.	135	10	10 00
Wm Gelmann.	136	10	10 00
Wm Gelmann.	137	10	10 00
Wm Gelmann.	138	10	10 00
Wm Gelmann.	139	10	10 00
Wm Gelmann.	140	10	10 00
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Wm Gelmann.	142	10	10 00
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Wm Gelmann.	152	10	10 00
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Wm Gelmann.	157	10	10 00
Wm Gelmann.	158	10	10 00
Wm Gelmann.	159	10	10 00
Wm Gelmann.	160	10	10 00
Wm Gelmann.	161	10	10 00
Wm Gelmann.	162	10	10 00
Wm Gelmann.	163	10	10 00
Wm Gelmann.	164	10	10 00
Wm Gelmann.	165	10	10 00
Wm Gelmann.	166	10	10 00
Wm Gelmann.	167	10	10 00
Wm Gelmann.	168	10	10 00
Wm Gelmann.	169	10	10 00
Wm Gelmann.	170	10	10 00
Wm Gelmann.	171	10	10 00
Wm Gelmann.	172	10	10 00
Wm Gelmann.	173	10	10 00
Wm Gelmann.	174	10	10 00
Wm Gelmann.	175	10	10 00
Wm Gelmann.	176	10	10 00
Wm Gelmann.	177	10	10 00
Wm Gelmann.	178	10	10 00
Wm Gelmann.	179	10	10 00
Wm Gelmann.	180	10	10 00
Wm Gelmann.	181	10	10 00
Wm Gelmann.	182	10	10 00
Wm Gelmann.	183	10	10 00
Wm Gelmann.	184	10	10 00
Wm Gelmann.	185	10	10 00
Wm Gelmann.	186	10	10 00
Wm Gelmann.	187	10	10 00
Wm Gelmann.	188	10	10 00
Wm Gelmann.	189	10	10 00
Wm Gelmann.	190	10	10 00
Wm Gelmann.	191	10	10 00
Wm Gelmann.	192	10	10 00
Wm Gelmann.	193	10	10 00
Wm Gelmann.	194	10	10 00
Wm Gelmann.	195	10	10 00
Wm Gelmann.	196	10	10 00
Wm Gelmann.	197	10	10 00
Wm Gelmann.	198	10	10 00
Wm Gelmann.	199	10	10 00
Wm Gelmann.	200	10	10 00
Wm Gelmann.	201	10	10 00
Wm Gelmann.	202	10	10 00
Wm Gelmann.	203	10	10 00
Wm Gelmann.	204	10	10 00
Wm Gelmann.	205	10	10 00
Wm Gelmann.	206	10	10 00
Wm Gelmann.	207	10	10 00
Wm Gelmann.	208	10	10 00
Wm Gelmann.	209	10	10 00
Wm Gelmann.	210	10	10 00
Wm Gelmann.	211	10	10 00
Wm Gelmann.	212	10	10 00
Wm Gelmann.	213	10	10 00
Wm Gelmann.	214	10	10 00
Wm Gelmann.	215	10	10 00
Wm Gelmann.	216	10	10 00
Wm Gelmann.	217	10	10 00
Wm Gelmann.	218	10	10 00
Wm Gelmann.	219	10	10 00
Wm Gelmann.	220	10	10 00
Wm Gelmann.	221	10	10 00
Wm Gelmann.	222	10	10 00
Wm Gelmann.	223	10	10 00
Wm Gelmann.	224	10	10 00
Wm Gelmann.	225	10	10 00
Wm Gelmann.	226	10	10 00
Wm Gelmann.	227	10	10 00
Wm Gelmann.	228	10	10 00
Wm Gelmann.	229	10	10 00
Wm Gelmann.	230	10	10 00
Wm Gelmann.	231	10	10 00
Wm Gelmann.	232	10	10 00
Wm Gelmann.	233	10	10 00
Wm Gelmann.	234	10	10 00
Wm Gelmann.	235	10	10 00
Wm Gelmann.	236	10	10 00
Wm Gelmann.	237	10	10 00
Wm Gelmann.	238	10	10 00
Wm Gelmann.	239	10	10 00
Wm Gelmann.	240	10	10 00
Wm Gelmann.	241	10	10 00
Wm Gelmann.	242	10	10 00
Wm Gelmann.	243	10	10 00
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## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen any time in operation. 3v141r

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to better them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and sellers for themselves, at the  
PACIFIC FOUNDRY,  
San Francisco.  
1v1

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

Giffard's Injectors,

For Feeding Boilers.

STODDART'S IRON WORKS,  
Beale Street, San Francisco,  
23v12 3m

## FOR SALE!

**PATENT RIGHT OF HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to

E. O. HUNT,  
28 SECOND STREET,  
11v24 San Francisco

## DUDGEON'S

PATENT

Hydraulic Lifting Jacks

—AND—

BOILER PUNCHES,

16v14 Eighth street, cor. Minna. or

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

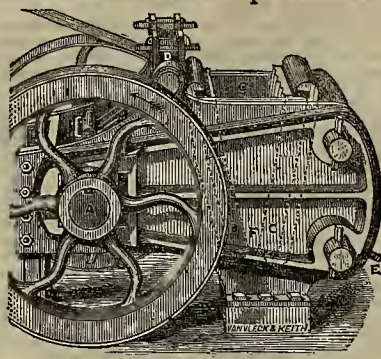
## PRICES REDUCED!

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action, Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 to 6 inch barrel; Rifle Games—an entirely new Arm—having a range and accuracy equal to a rifle, and most perfect design. All the new models for sale very low.

12v13tr

ALBERT E. CRANE.

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENT IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....850  
No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.**  
The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the line of crushing. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Pulon Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county: **RAWHIDE RANCH, Tuolumne Co., Sept. 28, 1866.**

**JAMES BRODIE, Esq., San Francisco.**—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your latest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, **R. P. JOHNSON,** Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATOR BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the owners have chosen to sue for the same will be raised to the sum of \$100 per Barrel.

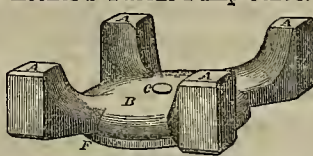
A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1865.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22, 1865.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street,  
San Francisco.  
12v13tr

## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C.

The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat, it does not draw the air for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed and insure a large supply of water.

Rights for the use or manufacture of this Valve, are for sale by **V. CUSHING,** 120 Front street, San Francisco.

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public. See illustration and description of this pump published every other week in this paper. 14v14qrtr

Notice to Miners,  
Well-Borers and Water Companies.

**M. PRAO** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. Also, manufacture Mississippi Stoves, of the latest Improved patterns, for vessels of all classes. Also, Ship Plumbing done.

**M. PRAO,**  
8v13ly Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

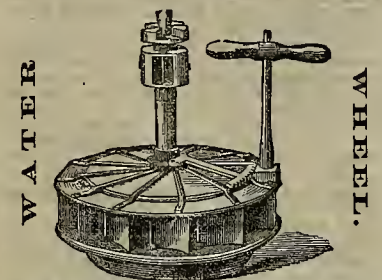
WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13tr SAN FRANCISCO.

## Brown's Filtering Heater!

**FOR PREVENTING INCORUSTATION IN STEAM BOILERS.**—purifies water from lime or any other impurity, and saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone.

It is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to  
5v14-ly **AUSTIN A. WELLS, Agent.**

LEFFEL'S  
American Double Turbine

**THESE WHEELS, UNEQUALED AND UNRIVALED IN** the United States or the world, have been fully tested on this coast more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

**ALBION, Klamath Falls, Oregon; Polson, O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coyne, Lexington, Santa Clara County; J. Y. McMillan, Lexington Santa Clara County.** Send for Circular, to **KRAFT & GRANT,** Agents for California, 26v13-lyq 310 Washington street, San Francisco

HUNTER'S  
Eureka Amalgamator!

**FOR WORKING THE SANDS AS THEY PASS FROM** the battery. The coarse particles of sand are reduced to pass through a No. 6 screen that would pass through a No. 5 in the battery; the fine flour gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The machine is four feet eight inches square on the bottom, and covered with iron dies 1 1/2 inches thick by four inches wide, extending across the bottom with alternate strips of wood on end of the same width. The rubbers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between rubbers. The box is also lined with copper to the bottom and all the loose ends, by eccentricity giving an oscillating motion, and the rubbers are suspended on iron hangers, and adjusted by set screws.

One-fourth of a horse-power is sufficient to run one machine of ten tone capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from **W. M. WATT, Esq., of the Eureka Mill,** will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is from rock that pays \$40 per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I have ever seen. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it; but the best recommendation I can give it is that I want four more. Will you please go to the Vulcan Foundry and order them for me."

On the 1st of April I had ordered for two more, for the Pittsburg Company at Nevada City.

The price for a Machine with rubbers made, and dies and wood set to the bottom and all the loose ends, is \$275. The weight is about one ton with cast iron box; but to save freight, the box can be made of boiler iron, saving 500 pounds weight.

Orders sent to the Vulcan Foundry, the Union Foundry, or the Union Foundry, First street, will be promptly attended to.

**ANDREW HUNTER, Patentee.**  
P. S.—Patent allowed.

HUNTER'S  
IMPROVED CONCENTRATOR.

**THE INVENTOR OF THE ABOVE RECENTLY IMPROVED** Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the value of the concentrates, and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs. 14v14

## To Quartz Miners and Others.

## NOTICE!

**I WISH TO CALL YOUR ATTENTION TO A PULVERIZER** of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for. 1v14 3m **JAMES HITCHENS.**

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Millers, Rolling Shoes and Reverse action. Millmen and others are invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by **G. W. STRONG, Assayer.**  
22v13

## NELSON &amp; DOBLE,

AGENTS FOR

Thomas Firth &amp; Sons' Cast Steel, Files,

Etc., Shear, Spring, Oerman, Plow, Blister and Toe Calk

Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

319 and 321 Pine Street,

Between Montgomery and Sansome, San Francisco.  
10v14qr

## V. CUSHING, Agent

For the Purchase and Shipping of Machinery OF ALL KINDS.

**SPECIAL ATTENTION GIVEN TO QUARTZ MILL** Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14tr

By Express.—Two cents per copy will be added to our usual rates of subscription (to pay by mail, Fargo & Co's tariff on papers sent by express. If connecting express in the interior make additional charges, subscribers must themselves settle the same.

## Important Facts.

A French gardener having occasion a few years since, to paint the woodwork in the interior of his greenhouse, took the occasion to make a trial of the theory of the absorption of heat by black color, hoping that he might thereby improve the vigor and growth of his plants. His paint was composed chiefly of the waste coal tar from a gas manufactory.

He was delighted to witness a marked improvement in the growth of every plant which was trailed up against anything covered with this paint. In one instance a grape vine which had been sensibly decaying for two years, and which he was about to remove, acquired a marked increase of health and vigor.

He was also not more surprised and gratified at another striking fact developed—that the spiders, caterpillars and snails, which had before seriously annoyed him, entirely disappeared from every part of the woodwork covered with this paint; and very few, indeed, were afterward seen in any part of the greenhouse. The fruits, as well as plants, were also sensibly improved, both within and without the greenhouse, wherever they were grown within the influence of this covering. Similar experiments, it is reported, have since been tried in quite a number of the vineyards of the Gironde, with equally favorable results.

These facts strongly remind us of what is said of the "pitch grounds of Tenerife." This pitch or brea once formed a thin superficial covering for a large tract of ground, outside of the main deposit, which has now become thoroughly mixed with the soil, and is said to constitute the most fertile portion of the island. The locality is covered with cottages and gardens, and vegetation thrives there with great luxuriance. The "pitch lake" is situated on an elevation reached by a gentle ascent of a mile and a quarter from the sea. It is from the running off or wearing away of this lake that these pitch grounds have been formed at a lower level than the lake itself. Everywhere on the confines of this lake, vegetation, both natural and artificial, is abundant and vigorous, and pine-apples grown on this tract are said to be remarkably good.

This fact may not be without importance to our gardeners and vineyard growers. Has any one paid any attention to the natural growth of vegetation in the vicinity of the brea deposits of this State, wherever these deposits are but sparsely mixed with a soil at all naturally favorable to plant growth? Of course an excess of such material cannot but be injurious. Would not such experiments as may be suggested by the above, be worth trying and reporting? Has any one any practical knowledge in the matter, or will some one make an experimental trial, and report the same to this or their local journals? Our contemporaries in the brea districts, might possibly do a service to some of their readers by making mention of the above, or correcting any erroneous impressions which may be created by these remarks.

**DAVIS' EXCELSIOR KNIFE CLEANER**, for polishing table and carving knives, is a rotary machine, of English invention, constructed with a drum, having the size and form of an ordinary grindstone, and like it turned with a crank. Brushes are placed within the instrument, face to face, by means of which, in connection with a given quantity of flour of emery, expressly prepared for the purpose, the knife is effectually cleaned in a very few moments after its insertion. All interested may call at W. Frank & Co's, 406 Battery street, where, besides many other curiosities, may also be seen some very life-like looking animals, formed of a species of German clay, we believe, and a novelty of interest to those who have never witnessed anything of the kind.

**CYRUS B. INGHAM**, editor of the Tama City Union, Iowa, wishes to know the address of the person who recently sent him a copy of the Press.



**OLNEY & Co., Auctioneers and Real Estate Agents,** attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 313 Montgomery street, San Francisco. 1010

**Gold Bars,** of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

**Hobbs' Grinder, Amalgamator and Concentrator,** combined and all within the same pan, can now be seen in operation at the Franklin Foundry, Fremont street, between Mission and Howard. Sulphurates perfectly concentrated within thirty minutes on the rim of the pan near the surface of the water—the process of grinding and amalgamating going on at the same time. All the inventor asks is an examination of his new Concentrator, believing it to be the best and quickest ever yet invented. 11v14-1f

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEERS, corner of Plac and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with *rose gold*—thus restoring them to their original usefulness and beauty. 15v14-1f

Call and examine the work. Finest quality of artificial work also manufactured. 15v14-1f

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From the commencement of Volume XIV of the **MINING AND SCIENTIFIC PRESS**, only a limited number of copies will be saved for files by us; consequently those who desire the paper for future as well as present value, should subscribe at once.

### Job Printing Press for Sale—\$250.

A Largest Size (half medium) RUOOL'S BEST JOB PRESS, in fine order and good as new, can be had for \$250, cash—lowest price. Warranted. Apply to DEWEY & CO., Mining and Scientific Press Office. 15v14-1f

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### To the Mining Community.

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS' constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 851 Harrison street, San Francisco. WILLIAM WILLIAMS, Practical Mining Engineer. 15v14qr

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Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

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ADMISSION: To all parts of the Gardens.....25 Cents. Children, under 12 years of age.....Half Price.

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KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

— ALSO —

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NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off. A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

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" CHRYSOPELUS.....CAPT. A. FOSTER  
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One of the above steamers, leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico and Red Bluff. Steamships ALAN, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE and SENATOR, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego. Office of the Company, northeast corner of Front and Jackson streets. B. M. HARTSHORNE, President. 15v12

## Gaston's Screw Grinder and Amalgamator

— IS —  
The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 15v14qr

Fig. 1.

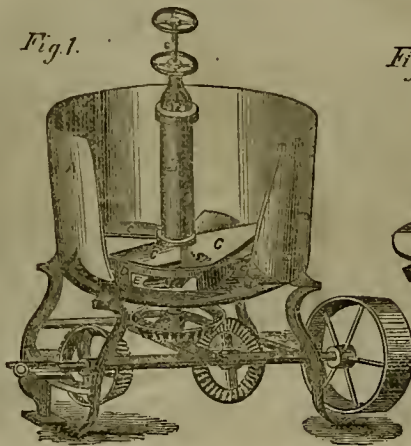
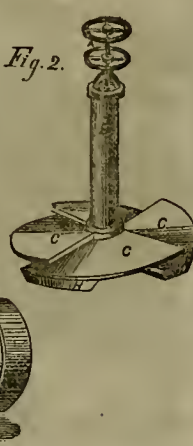


Fig. 2.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 15v14qr

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MADE TO ORDER  
And Shipped to all parts of the Coast.



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Open to all Players on the Pacific Coast.

A GRAND BILLIARD TOURNAMENT FOR THE CHAMPIONSHIP of the Pacific Coast will take place at Congress Hall, San Francisco, On the 16th, 17th and 18th days of May next.

First Prize—A splendid GOLD MOUNTED CUE and the CHAMPIONSHIP. There will also be four other prizes in cash, ranging from one hundred dollars up.

The New York American Billiard Players' Association's rules will be strictly adhered to in this contest. A Committee of Billiard Players will be appointed to regulate the details of the Tournament. Gentlemen wishing to participate in the contest will please communicate with STRAHLE & HUGHES, 15v14-1m 557 Market street, San Francisco.

### Pratt's Abolition Oil.

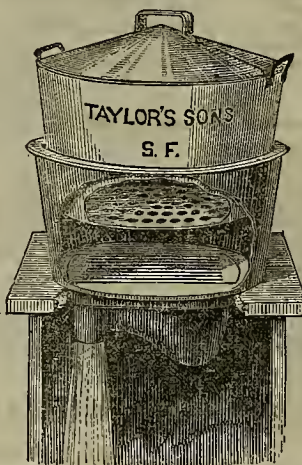
FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Measles, Swollen Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 524 Sacramento street, opposite Whit Clker House, San Francisco. 10v14-1y

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## Portable Steam Engines!

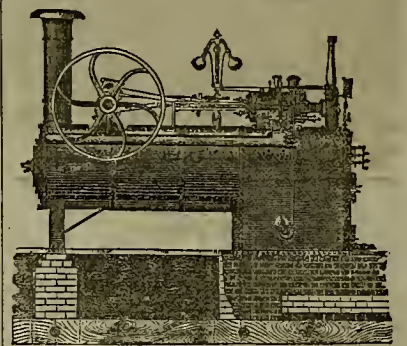
"Hoadley's" and "Hittinger's" Make,



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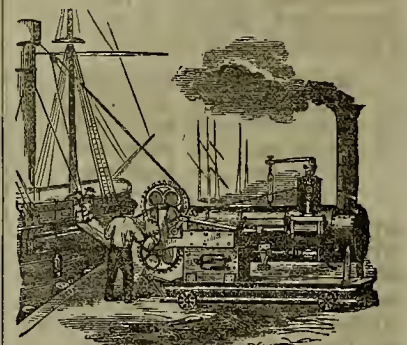
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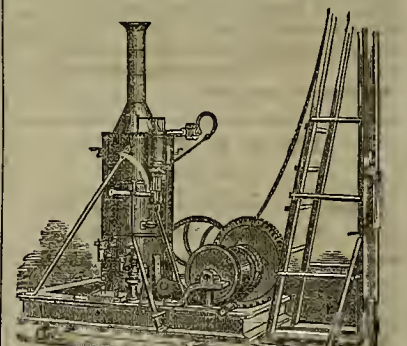
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.

Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

All sizes on hand from 3 to 30 horse power, with and without carriages. Also, Portable Saw and Grist Mills.

For sale by TREADWELL & CO., 9v14-6ml5p Corner of Front and Market streets.



PLUMAS COUNTY MAP—Prof. J. D. Whitney, State Geologist, abandons the contract, announced some time since, by which he was to furnish a map of Plumas county for \$3,000; and has sent a communication to the Board of Supervisors of that county, to the effect that, after considering the matter in all its bearings, he has come to the conclusion that it is the duty of the Geological Survey to furnish all the counties of the State with maps free of charge to the counties themselves.

**-USE-  
EMERY & EATON'S  
GREEN SEAL SMOKING TOBACCO.**  
15v14-6m

**Allen's Lung Balsam.**

The following letter, from Dr. A. L. Scoville, who has had many years experience in the medicine business, and with Lung Remedies, will give the afflicted still more assurance that the sure remedy is found at last; and the consumptive should lose no time in commencing the use of Allen's Lung Balsam:

CINCINNATI, January 9, 1864.

Gents—I make the following statement from a perfect conviction and knowledge of the benefits of Allen's Lung Balsam, in curing the most deep-seated Pulmonary Consumption. I have witnessed its effects on the young and the old, and I can truly say that it is by far the best expectorant remedy with which I am acquainted. For Coughs, and all the early stages of Lung Complaints, I believe it to be a certain cure, and if every family would keep it by them, ready to administer upon the first appearance of disease about the lungs, there would be very few cases of fatal consumption! It causes the phlegm and matter to raise, without irritating those delicate organs (the lungs) and without producing constipation of the bowels. It also gives strength to the system, stops the night-sweats, and changes all the morbid secretions to a healthy state.

Yours, respectfully, A. L. SCOVILLE.  
Consumptives, do not despair, because all the remedies that you have tried have failed, but try this Great Remedy. Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.

Sold by all Medicine dealers everywhere. 14v14-1m

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O. P. Truesdell, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 505 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.

TRUESDELL, DEWEY & CO.

San Francisco, April 15, 1867.

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Never fail to stand any climate.  
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**HENDY'S LATEST IMPROVED CONCENTRATORS,**

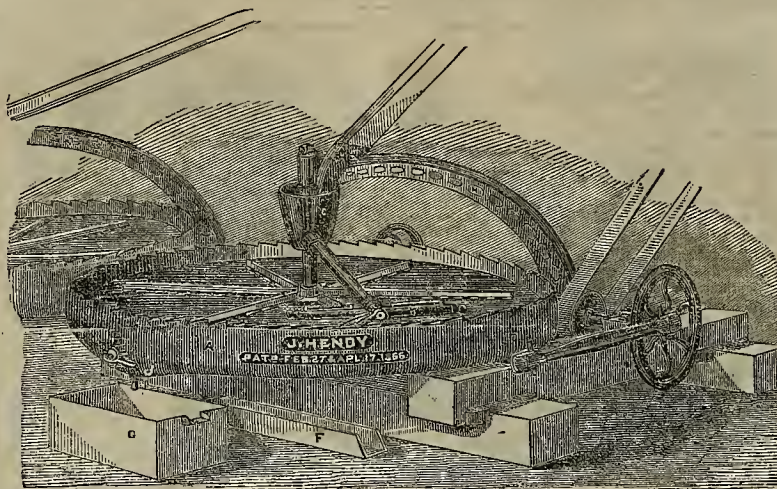


FIG. 1.

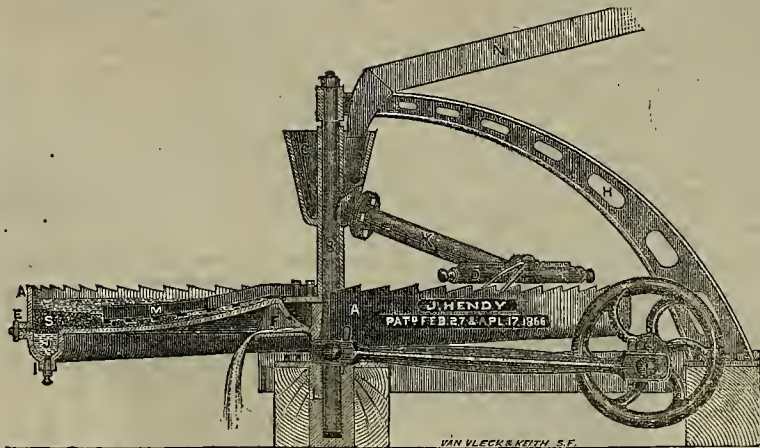


FIG. 2.

**FOR GOLD AND SILVER ORES,**

With Revolving Stirrers and Rotary Distributor.

Can be seen in operation at the Union Foundry, First St., San Francisco.

**Directions for Operating Hendy's Concentrators:**

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:

FIRST—Set the Pan, A, level, by its inner rim.

SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]

THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.

FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

**References:**

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:

EMPIRE MILL.....	Grass Valley, Nevada County.
GOLD HILL MILL.....	Grass Valley, Nevada County.
CONEY & BIGELOW MILL.....	Jackson, Amador County.
SPRING HILL MILL.....	Amador, Amador County.
GOLDEN GATE MILL.....	Volcano, Amador County.
OPHIR MILL.....	Placer County.
C. H. SCHNABEL'S MILL.....	Doty Flat, Placer County.
GOLDEN RULE MILL.....	Stewart Flat, Placer County.
BENTON MILL.....	Bear Valley, Mariposa County.
LOUISIANA MILL.....	Coulterville, Mariposa County.
RAWHIDE RANCH MILL.....	Jameson, Tuolumne County.
PEOPLE'S MILL.....	Alleghany, Sierra County.
TYRON & CO'S MILL.....	Prescott, Arizona.
WOOLSEY & CO'S MILL.....	Prescott, Arizona.
NOYES & CO'S MILL.....	Prescott, Arizona.
GUADALUPE & SACRAMENTO G. & S. M. CO.....	Sinaloa, Mexico.
TRIUNFO G. & S. M. CO.....	Lower California.

And in use in many other parts of this coast.

For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

**Remarks:**

Many Concentrators have been gotten up in this city. Some of these claim foreign origin; others are of home production. The sonorous Greek names, with which some of these have been dignified, ought, it would seem, to have entitled them to a better fate than that which has befallen them. A large proportion of these machines are now "numbered among the things that were." A few were still-born; never having had an existence except in the shape of advertisements and cuts, prematurely prepared by their too confident projectors. For one of these it was claimed, with a grand flourish of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order or in the way." Unfortunately, however, although it had a reasonable supply of legs, it obstinately refused to run. Amputation failed to remedy the defect, and it now lies forgotten among a heap of old iron,—a mechanical abortion.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works, for 1866, pages 51, 53.

**CAUTION.**

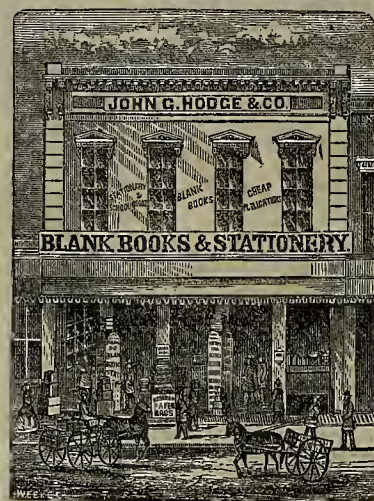
All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

March, 1867.

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.



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Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Cocks, Steam Whistles, &c.

HYDRAULIC PIPES AND NOZZLES.  
For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of Garratt's Patent Improved Journal Metal.

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 6v1

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A One-half Interest in the

**UNION IRON WORKS,**  
SACRAMENTO,

Owned by William R. Williams, is offered for sale on the most favorable terms.

**A Good Bargain**

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 85 feet front by 125 feet in depth, in a good location for this business, on Front street, between N and O streets.

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26v13-19-15p

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LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPENWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days

On the 10th, 18th and 30th of each month that has 31 days

When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding, when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 18th or 19th connect with French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates as given below:

April 30th—CONSTITUTION..... Capt. W. F. Laplage,

Connecting with the RISING STAR, Capt. Maury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines, can be obtained at the office of the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARGO & CO.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding the three months' delay requisite in transacting business through Eastern agencies.



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SAN FRANCISCO, SATURDAY, MAY 4, 1867.

VOLUME XIV.  
Number 19.

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San Francisco Market Rates.  
San Francisco Weekly Stock Circular.  
Mining Shareholders' Directory.  
Mining Stock Sales of the Week.

**THE ELEMENTS OF COMPOSITION, BELLES-LETTRES, AND ORATORY.**—This work, by Prof. Augustus Layres, is to appear in three parts, or books. The first part, the "Elements of Composition," is just published, and we have been complimented with a copy by the author.

It is a work which deserves more than a mere passing notice. It treats an old subject in a new way. It makes an agreeable pastime of what has been by many deemed an irksome task. Although not a treatise upon grammar, it has to do with matters which are the very end and aim of grammar; and in making of these matters an attractive study, it has a tendency to render that also more attractive. Grammar is generally voted, at school, the driest of all studies, and is shirked accordingly. Disgusted with the interminable string of "rules" which he is compelled to commit to memory, the student rarely troubles himself to look into their real use; and so they are gradually forgotten, as the school-days pass by, and the word-jingle, which alone made them at one time familiar, ceases. It is true that many such students acquire the habit of speaking and writing with correctness—and even elegance—but when this is the case it is due to a naturally accurate ear, together with the having cultivated a correct literary taste by constant familiarity with the choicest literary works, rather than to anything which could be called a knowledge of grammar. Such men, however faultless their own literary productions may be, if asked the reason why they would arrange a sentence thus instead of so, would be entirely at fault. Although knowing instinctively that it was correct, they would be utterly unable to explain it to another; and would consequently be not only unfit to act as teachers, but would often be subjected to a feeling of mortification by that inability.

There is no question that the grand stumbling-block in the way of the student of grammar, has been the faulty manner in which the subject has been presented to him. Prof. Layres, in the work under consideration, has "changed all that." He plunges at once "in *medias res*." He seizes a sentence (which is the unit in composition, whether written or spoken), holds it up before you; tears it to pieces before your eyes—or rather we should say neatly and skillfully dissects it—displays one by

one its several parts; makes you thoroughly acquainted with each, in its entirety; and then shows you how to put them together again. A series of such experiments, increasing in complexity so gradually that you do not feel the difficulty, and the thing is done; you are master of the subject. Here is the whole matter in a nut-shell. This is *analysis and synthesis*. This is the only way to teach anything—viz., by examples. In order, for instance, to become acquainted with the mechanism of a watch, a man must take it to pieces, note the structure and office of each of its several parts, and then recombining them into a single whole, observe the effect. What progress would the student of anatomy make in that science if his professor should confine himself to the enunciation of general propositions, unaided by demonstrations with platens, mannikin, or cadaver? Nothing but a vague indefiniteness would be the result of his teachings.

Prof. Layres proceeds in his course from the simple to the compound; and the student who follows him becomes a grammarian before he knows it. By the time he has completed the careful perusal of this little book, he is competent not only to analyze or to construct the most complex sentences, but to arrange such sentences together in the most effective manner for the proper treatment of a literary topic.

The work, beginning with the sentence, presupposes an acquaintance with words, and with the rudiments of grammar. In order to complete the contemplated school textbook series, it seems to us that an elementary work on grammar, or at least a preliminary chapter, introducing the pupil to the various "parts of speech," with their changes and powers, would be desirable.

Prof. Layres, who is a foreigner by birth, expresses, in his preface, the utmost admiration for the system of instruction in vogue in the public schools of the United States; and remarks that he has prepared this work especially with a view to its use in these schools. It will, however, be useful for study and reference, not only to the young student, but to the advocate, the clergyman, and the author. We understand that its adoption in the schools of Sacramento city has already been decided upon.

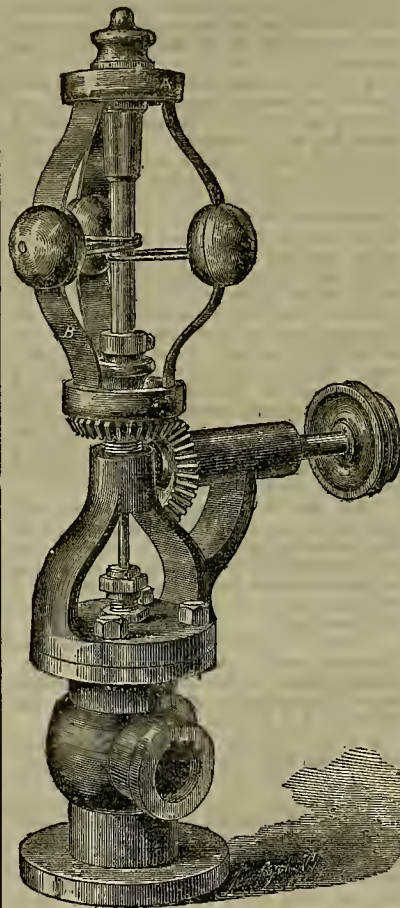
An Appendix, containing remarks on punctuation, and the use of capital letters, closes the work. It is published by A. Roman & Co., and was printed at the book and job office of the MINING AND SCIENTIFIC PRESS.

**QUICK WORK.**—The largest of the new steam fire engines was lying at the repairing shop, all in pieces, at the moment when the alarm was given for the Cosmopolitan fire. Mr. Hayes, the head mechanical engineer of the department took the matter in hand, and in three-quarters of an hour from the time of screwing up the first nut she was throwing two large streams upon the burning hotel.

**THE SUBMARINE CABLE** between Florida and Cuba will be in working order by June 1st, unless accident prevents.

## Pickering's Patent Regulator.

We present this week a form of steam engine regulator, that is perhaps new to some of our readers. It is, however, in extensive use in the Eastern States and has been adopted during the past two years by several of our own prominent machine shops, a number of quartz mills, flour mills, fac-



tories, and on board of the ocean screw steamers Ajax and California, running on this coast.

Propeller engines are very apt to run irregularly when the ship is in a rough sea. This is termed "racing" by engineers, and it causes much loss of power, besides being dangerous to the safety of the engine. To maintain a uniform speed in such cases is very difficult. The ship rising and falling so rapidly requires instantaneous action on the part of the regulator. We are assured that this regulator has accomplished the purpose in the most perfect manner.

It is the invention of Mr. Pickering, of the firm of Pickering & Davis, New York, and patented October, 1862, and October, 1865. The patentee has recently gone to Paris, and it is expected this will be one of the American inventions that will challenge all Europe. It is marked by great simplicity, and having no joint it is extremely sensitive, as well as durable, besides being the cheapest economical governor that is made. We append a description:

As may be seen by the engraving, the ends

of the springs are secured to flanges, the lower of which, resting on steel washers, and having a collar to prevent its rising, is capable of only a rotary motion, while the upper one, being at liberty to move lengthwise as well as to rotate, receives its rotary motion from the lower one, through the springs, and communicates any lateral motion, due to the varying centrifugal force, immediately to the balanced valve to which the governor is firmly secured by the bracket, a part of which forms a long bearing for the horizontal spindle, which communicates motion from the power to the governor through the miter gearing, which is used for the smaller sizes, while for the larger ones, when required to run perfectly noiseless, we use frictional gearing, which is giving great satisfaction.

The object of this invention is to obtain the requisite centripetal force and stiffness without making the springs too heavy, and consists in the peculiar construction of the spring, and also in the shape of the curve given it, by the manner in which the ends and middle portion are secured, so as to keep those parts, at all times, parallel with the center of motion. By this arrangement we can use steel so thin, that all liability to break, or tendency to "set," or lose its elasticity, is dispensed with; while, by using two or more strips together, we obtain the required centripetal force. The peculiar curve obtained by this arrangement is called a double cyma, by the use of which, two or more strips, firmly secured together, will work freely, without any tendency to huckle, or interfere with each other's action.

The various sizes of these regulators can be seen by calling on David Stoddard, at 114 Beale street, San Francisco, who is the agent of the patentee, and keeps a full assortment on hand. Mr. S. is also agent for Giffard's Injectors, which have received some new and valuable improvements at the hands of American manufacturers.

**THE SAN FRANCISCO PORT SOCIETY.**—We have received the proceedings of the seventh anniversary of the San Francisco Port Society, containing the chaplain's report, constitution, list of officers and members of the Society, and a list of contributions to the building fund of the new Seamen's Bethel, a brief illustrated description of which we gave last week. The officers of this Society are as follows: President, Ira P. Rankin; Vice President, R. B. Swain; Secretary, J. Rowell; Treasurers, David N. Hawley; Trustees: W. R. Stowell, D. N. Hawley, J. T. Dean, Wm. C. Hinckley, John T. McLean, Oliver Eldridge, E. P. Flint, J. Rowell and Capt. J. F. Stewart. This Association is accomplishing much good in ameliorating the condition and elevating the moral standard of the seamen of this port. Rev. J. Rowell, as pastor and an officer, seems to be untiring in his efforts.

**LARGE FORGING.**—The largest shaft ever forged in this city, was that recently made at the Pacific Forge Works for the steamship *Amsrica*, which came in on her last trip from San Juan del Sur with one wheel, and being made whole, sailed again on the 26th ult., with two. The broken shaft was built up with scrap iron faggots and welded under a trip-hammer. These works, now on Mission creek, are about to be removed to the Potrero, and greatly enlarged.



## Communications.

In this Department we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Action of Electricity on Metallic Solutions.

BY EDWARD PIQUE.

EDITORS PRESS:—Some time ago you were kind enough to insert an article of mine in your valuable paper, where I proved, as plainly as possible, that in galvanic batteries the chemical action is not the origin of the electricity produced, although such an opinion has been expressed by some of the most learned men of this age. At present, I intend to correct another erroneous opinion connected with this matter which has been put forth by several eminent natural philosophers.

They assume that in a watery solution of most of the metallic salts, the water is decomposed, and that the hydrogen resulting from the decomposition of the water acts on the metallic oxide in solution, whereby the metal is reduced and deposited on the negative electrode. Such an idea is simply absurd, for the reason that the decomposition of water requires electricity of a much higher power than the decomposition of most of the metallic solutions. For instance, if we form a weak galvanic apparatus by immersing a plate of copper and one of amalgamated zinc in dilute sulphuric acid, and conduct the electricity so produced into a glass of water, by means of two copper plates connected with each of the above metals, the water will not be decomposed. If we now dissolve some blue vitriol in the water contained in the latter glass, the copper of the solution will immediately be reduced and deposited on the negative electrode, while the positive copper plate will, in the same measure, be dissolved. We do not see any appearance of hydrogen gas, since the current is not strong enough to decompose the water. If we now increase the electric tension by connecting a number of zinc and copper pairs, or by using a more powerful galvanic apparatus, as, for instance, a porous cell arrangement, with platinum and nitric acid on one side, and amalgamated zinc on the other, the water will be decomposed simultaneously with the sulphate of copper in solution, hydrogen will be evolved at the negative plate, and copper will appear at the same place; but it will adhere only lightly to the plate, and drop off as soon as a larger quantity be formed. Neither will it have the beautiful metallic appearance, as in the first instance; but it will represent a dark, spongy mass, in consequence of the hydrogen disintegrating the metallic deposit, and also because most likely a partial oxidation of the copper has taken place.

What I have said about the sulphate of copper applies equally to many other metallic solutions. I do not see any necessity to assume that the hydrogen of the decomposed water acts as a reducing agent on the metallic compound in solution, since electricity in itself will separate the constituents of the compound; and it is a great deal simpler to say, that if we treat, for instance, a solution of chloride of copper in the way above stated, the copper will be attracted by the negative plate, and the liberated chlorine will dissolve a part of the positive copper plate. A similar explanation will answer for any other solution of metals. That the water acts only as a dissolving medium, and is by no means a necessary assistant to the decomposition of metallic compounds, is very simply proved by the fact that most of the chlorides, in a fused state, are very readily decomposed by the galvanic battery, and the metal obtained in a pure state. Even some of the most electro-positive metals (as, for instance, the metal magnesium) have been produced in quantities by this method.

To throw a little more light on my first

statement, I wish to refer the reader to the law that operates when a mixed solution of several metals is submitted to the action of a galvanic battery. The different metals in solution are connected with their negative partners; as, for instance, with oxygen, chlorine, etc., with different degrees of intensity. Consequently the electricity will likewise have to be of different tension or power to effect a separation of the different combinations. Water, being an oxide, has to follow the same regulation. A very feeble degree of electricity is sufficient to decompose chloride of gold or platinum, a little stronger for nitrate of silver, still stronger for sulphate of copper. Then follow, in succession, the sulphates of tin, cadmium, zinc, nickel, iron, manganese, and the salts of the alkalis. Every one, in the order mentioned, requires a more powerful degree of electricity for its decomposition than the preceding ones. The oxide of hydrogen, or water, requires a considerable tension of electricity for that purpose, more so than most of the other oxides.

If we now, for instance, mix the solutions of sulphate of copper and sulphate of zinc, and apply electricity of just sufficient tension to decompose the sulphate of copper, the result will be that nothing but a deposit of copper will appear on the negative plate, and all the zinc will remain in the solution; but if we apply electricity of more power or tension, so that according to the size of the immersed metallic surface, more electricity will pass than is required to decompose the sulphate of copper, a part of the zinc will at the same time be reduced, and we shall obtain on the negative plate a coat of brass, which is an alloy of both these metals.

A similar explanation will apply to a solution of sulphate of copper alone, or of any other single metallic compound in water. A weak degree of electricity will reduce only the metal, but electricity of a higher tension will decompose the water at the same time, and in the latter case the hydrogen of the decomposed water will cause the spongy appearance of the reduced metal, which is often destitute of a metallic appearance. Even some metals are deposited from their solutions as oxides only when acted on by currents from large batteries and yet are deposited in a brilliant metallic form if submitted to the action of a weak electric current. Of these, nickel is an example. A solution of its chloride or sulphate will yield a gelatinous green oxide when a powerful electric current is introduced; but when the current is weak, it will form a crust of metallic nickel on the negative electrode, often of a silvery luster.

This fact is nothing new. It is well known and mentioned by all the writers on this subject; but, strange to say, not one of those natural philosophers ever attempted to give a reason for this phenomenon. I will try to give my opinion to the best of my knowledge.

Certainly no one will pretend that the hydrogen which, simultaneously with the metal, appears at the negative plate, could cause the oxidation of the metal, as the hydrogen has just the contrary effect.

I will, to explain this phenomenon, first refer to the law that governs the communication of electricity. If a body is charged with one kind of free electricity, and comes in immediate contact with another body, particularly if they are both good conductors, the electrified body will give up a part of its own electricity, and, communicating it to the other body, will charge the latter with the same kind of electricity as itself possesses. If, on the contrary, these two bodies do not touch each other immediately, but are separated by a small layer of a non-conducting or badly conducting substance, induction will come into play, and, as every electrician knows, in this case the electrified body will not charge the other body with the same kind of electricity as its own, but with just the contrary kind. Now, in the above case, the hydrogen plays the part of the insulator that separates the metal intending to encrust the negative plate from the latter, and, consequently, puts the reduced metal in a highly positive and finely divided state, both of which conditions are favorable to a rapid oxidation.

As an example of the protecting influence of the negative plate on metallic deposits, I will mention only the interesting case of the metal ammonium, which, when reduced from a solution of its chloride by a weak battery in contact with a little quicksilver, will form an amalgam. This spongy ammoniacal amalgam, although it cannot be kept immersed in water even for a few instants without the formation of ammonia, yet as long as it is connected with the negative electrode of the battery, it may be preserved, without change, from days or weeks. The instant the connection with the battery is broken, a mass of this amalgam as large as

a walnut, appears to vanish in a few seconds, torrents of minute bubbles being given off, and a scarcely appreciable quantity of mercury being left on the wire. Or, again closing the connection with the battery, decomposition recommences, and the amalgam is reproduced. (See *Bird's Natural Philosophy*.)

This fact proves plain enough that the amalgam, as long as it is in connection with the negative electrode, participates in the electro-negative character of the latter, which not only enables it to resist the oxidizing influence of the water, but even to continue the reduction of the metal ammonium from the solution on its own surface.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

NUMBER TWO.

[Continued from Page 242.]

Twenty-two miles further up Reese River valley, following the western base of the Toiyabe Range, we come to San Pedro cañon, in

WASHINGTON DISTRICT.

Here the inhabitants have thus far employed themselves to better advantage, in raising turnips and cabbages, than mining. There are, however, mines in this district well worthy the attention of capitalists; among them, lodes of argentiferous galena that might be made very profitable, under proper management, by the smelting process. One in particular, the "St. Elena," has attained considerable note. This has been managed by Señor Alvarez, a Spaniard, who seems to have been poorly calculated to manage a work of such magnitude without the adequate means. He has expended a fortune on this mine, and, I understand, is now at the East endeavoring to bring capital to bear on it. May his success be as boundless as his enterprise. Besides the immense amount of lead contained in the ore, it yields upwards of \$100 per ton in silver.

In the summer of 1863, Messrs. Hersherperger & Co. brought a 10-stamp mill into this district; a situation was selected above the town of Washington, and five of the stamps put in operation that year; but for some unexplained reason, the miners failed to supply it with ore, and latterly it has been used as a sawmill, turning out considerable quantities of lumber from the white pines that grow high up the mountain sides above the mill.

There are many really good mines in Washington district; but if the miners cannot, or will not develop them, they must be content to have them lie idle and comparatively unnoticed, till the wide field of choice now open to capitalists is narrowed down. Among the mines here worthy of notice, I will mention a group of parallel lodes, owned by Emanuel San Pedro, an intelligent and hospitable native of Spain. The series is admirably situated for tunneling, with a fine stream of water running past the mouth of the tunnel, and surrounded by an almost exhaustless supply of the best known fuel. This group is in a narrow belt of granite. The lodes are from twenty to fifty feet distant from each other, and are large and moderately rich as far as developed; which development amounts to but little. San Pedro having exhausted his means elsewhere, is now waiting with admirable fortitude for "something to turn up." I venture nothing in engaging that he will entertain in a hospitable manner, and give any stray capitalist a "good lay."

The town of Washington, situated in San Pedro Cañon, with a beautiful stream of clear water coursing down from the highest peaks of the Toiyabe Range, through its main street, might, without much stretch of imagination, be called a romantic locality. It has evidently seen livelier days than at present; still many of the pioneers stick, with the tenacity of barnacles, confident that their day is dawning. In no portion of the Toiyabe Range has Nature been more

lavish in her bounteous supply of timber, than here.

We will now take the reader over the line into Nye county, turning our backs to Lander for the present, the boundary running in a northeast and southwest direction, through the town of Washington. Crossing the sage-covered plain in a westerly direction five miles, we reach

REESE RIVER.

Here we find this far-famed stream in all its glory, entirely hidden as we approach by the luxuriant rye grass, wild currant and willows. It is rapid at this point and about six yards wide, its eddies and overhanging, grass-covered borders affording excellent hiding places for the beautifully speckled brook trout that sport in its waters. The volume of water here is greater than at any other place along its course, while only fifteen miles below, in the vicinity of Covington's ranch, it sinks for several miles, reappearing near Willson's ranch. One of Austin's enterprising merchants will erect a flouring mill here during the coming summer, in anticipation of which the ranchmen along the river, and elsewhere throughout the agricultural portions of this region, are busy putting in large crops of wheat and barley—last year's experimental crops having proved that Central Nevada is capable of producing its own bread; aye, and of furnishing a surplus for the desert region lying to the south.

We are now on the stage road leading from Mammoth and Lone to Austin; the distance by it back to Austin is thirty-six miles, being somewhat nearer than by the road we have traveled. This road follows the Reese River Valley in a north and south course over forty-five miles. Our course is now due south, up the river for eighteen miles to Bramber's Station. Here the broad valley of Reese River begins to contract; the Toiyabe and Shoshone ranges approach till, eighteen miles above, a low divide only separates them, forming an accessible pass to the great arid plains on the south.

Opposite Bramber's Station, and for some distance below, the peaks in the Toiyabe Range reach the altitude at which the white and yellow pine flourish. A close observer can readily distinguish this line of altitude at the distance of eighteen or twenty miles. The foot-hills and mountain sides two-thirds of the way up are covered with the dense, dark-green foliage of the nut pine; then comes a narrow belt destitute of timber; lastly, the northern slopes of the highest peaks will be covered with clumps of the majestic white pine, towering above their dwarfish kin below. At Bramber's our road turns to the west, passing over the Shoshone Range by easy grade, six miles, where, near the western base, is situated Lone City, in Union District.

[To be Continued.]

LATEST NEWS FROM ARIZONA.—Late news from Hardyville report the miners in the San Francisco, Sacramento and Waba Yuma Districts all busy at work, sinking shafts, running tunnels into their ledges, and getting out ore for the mills. The mill at Hardyville (of ten stamps) is running day and night. The ore crushed is very rich, which encourages the miners to push the developments of their rich lodes.

Mr. F. H. Adams, with a party of miners, starts for the Sacramento District to develop the Antietam lode, which is very rich in copper, as also in gold and silver. The mine is owned by the Specie Basis M. Co., of Philadelphia. The same company also owns a number of other lodes in that District, which they will soon develop. The miners all feel greatly relieved since the arrival of two companies of cavalry at Fort Mohave, which are after the red-skins wherever seen. Provisions of all kinds are plenty at Hardyville and vicinity. Late news from Williams' Fork confirms all previous reports of the rich copper mines now being worked by several companies at that place. Stages now arrived regularly with the United States mails.

SCORPIONS IN DURANGO, MEXICO, are of an especially venomous species. The government, in the time of the Viceroy, offered a bounty of six cents each. The consequence was that the people went into the business of raising them. The increase became so great that the bounty has been gradually reduced, until now it is only half a cent. But even at this price it pays to breed them.



## Mechanical.

COMPARATIVE RESISTING POWERS OF A HOLLOW SPHERE AND A HOLLOW CYLINDER. Mr. Zera Colburn, in "Engineering Facts and Figures," says that "The strength of a hollow sphere to resist internal pressure is exactly twice that of a hollow cylinder of the same diameter, material and thickness."

\* \* \* "The place in which rupture, if it happen at all, will take place in a hollow sphere, is the largest plane that can be drawn through it, and the metal resisting the strain tending to cause rupture, is the whole section of metal bounding the plane."

\* \* \* "In a hollow cylinder, the area upon which the greatest pressure tending to cause rupture will be exerted, is that represented by the product of the length into the diameter of the cylinder."

The ends of a hollow cylinder, the common form of a boiler, add nothing to the strength of the cylindrical part, when a rupture begins in that part, as it usually does. In boilers where great strength is desirable, without regard to cost or convenience of form, the cylindrical shape should be used; and since such a shape gives twice the strength of the ordinary form, may there not be economy in a more general adoption of such a mode of construction. Mr. Colburn says that a cast iron sphere, seven feet in diameter and seven-sixteenths of an inch in thickness, is as strong as an ordinary wrought iron cylinder boiler, of the same internal capacity—the great difference between the tensile strength of cast and wrought iron, in a boiler of the dimensions named, being fully compensated by the difference of resisting strength between the spherical and cylindrical forms.

In comparing cast with wrought iron, it may not be inopportune to allude to the fact that the capacity of the former for the transmission of heat is much greater than the latter. Hence cast iron, if presented in a safe form, is better adapted to making steam boilers than wrought iron. The superiority of the Harrison (cast iron) over the ordinary cylinder or wrought iron boiler, in point of safety and the economical production of steam, is due to the facts above set forth. In fact, the only thing which has hitherto prevented that boiler from coming into general use, is the difficulty of keeping steam-tight the innumerable joints which are inseparable from its mode of construction.

WIRE DIRECT FROM THE BLOOM.—Messrs. Johnson & Nephew, of Mauchester, England, wire manufacturers, are now producing wire by a continuous process of rolling and drawing; so that there is no break in the work from the time the bloom leaves the furnace until it is wound up in the form of wire on a reel. Sieman's gas furnace is used by them, and blooms are used weighing 100 pounds each. The blooms are conveyed from the furnace directly to a series of rollers, which are geared so as to give an increasing velocity proportioned to the various stages of elongation, until the bloom is all converted into wire.

SAWING IRON.—The saw is now used with great success in England, in cutting out locomotive frame plates and other such like work. An endless band-saw is used, half an inch wide, one 32d of an inch thick, and run at a rate of about 200 feet a minute; it is lubricated with soap, and cuts 3/4-inch plates at the rate of one inch feed per minute. It works four or five hours without sharpening. The finest angles are said to be cut with a precision never attained with the old methods.

IRON MANUFACTURE IN PRUSSIA.—The value of steel manufactured in Prussia in 1850, amounted to only \$300,000; in ten years thereafter it rose to \$1,250,000, and now amounts to nearly \$9,000,000 per annum. The manufacture of pig, cast and wrought iron has increased in about the same ratio, and now amounts to about \$50,000,000 per annum.

OILS AND BEARINGS.—We observe an announcement from Europe that the higher American oils contain a considerable amount of bisulphide of carbon, which may have something to do with the injurious effect upon bearings and journals. This "injurious effect" is chiefly due to the presence of acid introduced in the refining process, and not subsequently washed out as thoroughly as it should be. Lubricating oil should be prepared without the aid of acids—it is so prepared by Messrs. White & Co., and also by Stott & Co., both of this city. The time is not distant when the use of acids and alkalis in refining coal oil will be entirely done away with, as an expensive and useless process.

THE TEMPERING OF STEEL TUBES.—A correspondent of the *Scientific American* writes to that paper as follows: "In your issue of Feb. 16th, I notice an article from correspondent 'V,' in which he gives the manner of tempering steel tools for various purposes, stating the color that the steel assumes. Now I think his rule will not hold good in all cases, as I find that the coloring depends altogether upon the amount of polish given to the steel after it is hardened. So far as my experience goes, I find that the higher the polish the higher the color should be left.

For instance, take a piece of steel and harden it, then give it a bright polish, and for a wood-cutting tool, it only requires drawing to a pale straw-yellow, while the other side which is not polished at all, will be deep blue. I think there can be no definite rule given for all to go by, unless we can have a standard rule for the polish to be given to the hardened surface. Such a rule I think is impossible, and the best way is for each steel worker to go by his own experience. It is a fact among steel workers that when one goes into another's shop and sees the color that he leaves his tools, when he tries to imitate the other, his tools will not stand, although he may give them the same shade of color. The reason is, I think, one gives the tool a higher polish than the other. If any of your correspondents can give a standard rule to polish by, so that every worker can give the same polish, I should like to hear from them and so would others.

FRICTION.—The friction of iron journals in brass boxes, with a film of good oil interposed, has been found in some cases to be as little as one-sixteenth of the weight. Ordinarily it is about one-thirtieth of the weight, while if the surfaces are wiped dry from oil it is about one-tenth. The friction of metals upon each other becomes a larger proportion of the pressure as the pressure is increased. The friction of wrought-iron on wrought-iron, at a pressure of 32½ pounds per square inch, was found by Mr. G. Rennie to be 14 of the pressure. At 4½ cwt. per square inch, it was 400 of the pressure. Two thin metal plates, their inner faces roughened like those of a vise, and held together by screws, form a cheap, strong and convenient fastening for driving straps. If the strap stretch, the screws (which pass between the ends of and not through the strap) have only to be loosened, the ends of the leather cut shorter, and clamped anew.

Spur-gearing has been driven at a surface speed of nearly a mile a minute, a three-foot gear making 500 turns. At this speed the motion, with good gearing, is very smooth.—*London Engineering*.

STRENGTH OF IRON UNDER DIFFERENT CONDITIONS.—During some experiments made by the U. S. Board of Ordnance, under the direction of Major Wade, it was ascertained that a gun, burst with hydrostatic pressure, showed only about one-third of the strength exhibited under direct tensile strain in a testing machine. Among many similar results, a gun burst with a pressure of 9,000 pounds per square inch of resisting metal, whereas a sample bar of the same iron bore 27,350 pounds per square inch before breaking.

THE BERLIN WARE, so celebrated for its power of withstanding heat, acids and alkalis, according to Dingler's *Polytechnic Journal*, is composed of 45 parts kaolin, 37½ alumina and 16½ feldspar. The enamel is composed of 42 parts silica, 33 kaolin, 13 unburnt gypsum and 12 of Berlin ware, as above described.

PLATINUM-STEEL ALLOY.—The proportions of platinum that appear to improve steel for cutting instruments are from one to three per cent; 1.5 per cent is thought to be about the best which can be thus employed.

## Scientific Miscellany.

THE SPOTS ON THE SUN.—A DISCOVERY. The astronomers at the Kew Observatory (England) after a careful and close examination have discovered a most remarkable coincidence between the appearance, size and varying position of the spots on the sun, and the revolutions of the planets. When Jupiter and Venus are both in conjunction the action is observed to be much more marked than when they are in opposition.

The nature of the influence exerted, in an opinion expressed by Prof. Tate, is "that the properties in a body, especially those with respect to heat and light, may be influenced by the neighborhood of a large body;" and an influence of this kind would naturally be most powerful upon a body possessed of a very high temperature, like the sun; a very small increment of heat causing a mass of liquid to assume a gaseous form, and *vice versa*. So that the heat withdrawn by Jupiter and Venus from the side exposed towards them, might be sufficient to cause a copious condensation of gases which might have a visible effect directly, or produce mechanical changes by means of altered refraction varying the distribution of a great amount of heat. This conjectural explanation will be held subject to the results of a more extended comparison of facts.

THE LOSS OF LIGHT BY GLASS SHADES. Carefully conducted experiments, with the photometer, have fully proved that there is a very great loss of light by the use of any kind of shade. Even the cleanest and purest crystal plate reduces the intensity of gas or coal oil light fully six per cent. The following comparative table has been carefully prepared:

Description of Shade.	Loss of Light.
The cleanest glass.	6.1 per cent.
Crystal plate.	8.5 "
Crystal glass (common).	10.5 "
Ground glass.	29.4 "
Smooth opal.	52.8 "
Ground opal.	55.8 "
Ground opal, ornamented with painted figures.	73.9 "

The screen through which the evolutions of light are propagated, serves to diminish first the rapidity of the vibrations requisite to produce the most refrangible rays, and in proportion as the transparency of the screen is diminished, by any cause, this arrest becomes more and more complete. The use of screens, it will thus be seen, should form an important matter for consideration in lighting public halls, etc. Much economy may be employed in their choice.

HOW TO CRYSTALLIZE CARBON.—Take a long thin leaf of gold, and wind round it a helix formed of a similar tin leaf, so that the covered and uncovered portions of the gold shall be about equal. Now, with the metallic couple thus formed, a spiral is made, which, if plunged into the sulphide of carbon, will slowly decompose the sulphide—the sulphur combining with the tin, while the liberated carbon will be precipitated in crystals.

THE KNOWN ASTEROIDS, or minor planets revolving between the orbits of Mars and Jupiter, now number ninety-one. The ninety-ninth was discovered by Dr. Luther, of Bilk, near Dusseldorf, on the first of October last, and the ninety-first and last at the Marseilles Observatory, at about the same time.

DYNAMIC FORCE.—A remarkable discovery has been made by Mr. C. Siemens, which demonstrates, in a striking manner, the convertibility of dynamic into electrical force. A bar of soft iron enveloped with copper wire, not transversely, but in the direction of its length, if inoculated in the slightest degree with magnetism, and then made to rotate rapidly, generates electricity to such a degree that wire is melted by the currents, and effects are produced which have hitherto required the aid of an electro-magnet.

LIGHT AND HYDROGEN.—It is a suggestive statement, if correct, that an atmosphere of hydrogen supplies to plants the want of light, enabling them to grow green in the dark. The fact that they are nearly colorless, when grown in the dark and in common atmospheric air, is well known.

The annual production of diamonds in the world is set down at \$4,500,000 in value.

ELECTRICAL STATE OF THE EARTH'S CRUST.—M. Matteucci has discovered that if the surface of the earth be connected at different altitudes by a conducting wire, a constant current of electricity will flow from the lower to the higher point of contact, the intensity of which will be in proportion to the difference in altitude of the two points. Geological formations and atmospheric changes will of course modify this action.

The following paragraph may be read with interest in connection with the above:

The attempt to establish telegraphic communication with underground workings at the Pewabic Mine, Lake Superior, has disclosed a curious difficulty. Since the discovery that by placing each end of a telegraph wire in the ground the circuit is made as completely as when two wires are used, but one wire has been employed, and the telegraph successfully worked. The wire used in the Pewabic Mine is a 1-16th copper wire, wound in the same manner as water-proof fuse, the wire taking the place of the powder. After the line was set up, to the surprise of all, no signals could be transmitted, and though the operator made a thorough examination and tried numberless experiments, it could not be made to "give one little sign of life." The end of the wire underground was put in a hole drilled in the rock and tamped in; a bed of earth was afterwards made, and lastly a pool of water tried, all to no effect. The circuit was broken at as short a distance as 30 feet below surface, while above ground it works well enough. Will some of our scientific readers offer an explanation?

METEORITES.—Prof. C. W. Shepard, of Amherst College, has one of the finest meteorological collections in the world. He has made their constitution a subject of careful study, in the progress of which he has divided them into three classes, as follows: The first class, "Litholites," or stony, derived from the Greek word *lithos*, a stone, embraces three sub-classes. 1. Eucritic, or distinct earthy individuals; crystalline. 2. Disortic or indistinct earthy individuals. 3. Anthracite, or black. The second class, "Lithosiderites," or mixed stone and iron, from the Greek words *lithos* and *sideros*, iron, embraces two sub-classes. 1. Pleiotholitic, or more than half stony. 2. Meiotholitic, or less than half stony. The third class, "Siderites," consisting chiefly of iron, includes two sub-classes. 1. Psatharic, or brittle. 2. Apsatharic, or tough. Each of these sub-classes is subdivided into several orders, which cannot be here enumerated. Under these orders he has arranged 211 varieties, stating when and where each was found. Under the head of meteoric minerals he enumerates eighteen species which are supposed to have existed in meteorites anterior to their arrival within our atmosphere.

THEORY OF STEEL.—M. H. Caron, in a communication made to the French Academy of Sciences, attributes the combination of iron with carbon or other elements of the same family by which tempered steel is formed, to the sudden shrinking of the mass, which he considers as analogous to the instantaneous compression produced by hammering. In illustration of this point, he found that by hammering a bar of iron heated to a bright redness, on an anvil covered with powdered charcoal, the face of the bar in contact with the charcoal was, in spots, converted into steel, and capable of resisting the file. His researches also confirm the results of previous experiments, that the density of steel is decreased by tempering. In one specimen, after thirty successive temperings, the density was reduced from 7.817 to 7.743.

A NEW COMET was discovered on the 22d of January, by M. Stephan, director of the observatory at Marseilles. It possesses a well defined nucleus, with a tail in line with the direction in which it is seen from the earth. Its appearance at this time is regarded as highly opportune for an examination of its physical characteristics, by spectrum analysis, which examination will be made on its nearest approach to the earth.

THE SUPPOSED LUNAR VOLCANO.—We noticed some weeks since some supposed changes in the appearance of a volcanic crater in the moon, from which it has been inferred by European astronomers that the volcano must be, at least at times, in a state of activity. *Per contra*, Mr. Rutherford, on this side of the Atlantic, has lately examined all his photographs of the moon (which, it is well known, far surpass in size as well as minuteness of detail any European pictures), with especial reference to this subject, and he avers that he is unable to detect any change in the brightness of the locality in question.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**AN IMPROVED GATE FASTENER.**—The Contra Costa *Gazette* describes a new "Gate Fastener" recently invented by Mr. George McCoy, of Antioch, in that county. The invention consists in the application of a V spring similar to that of a gun lock, to the bolt, which by action of the spring is operated so quickly that it will infallibly shoot into the fastening mortise, however quickly the gate may be swung, and cannot be drawn out except by direct pressure upon the opening lever, which is so arranged as to be reached from on horseback or on foot. In the model inspected, the gate was hung to swing both ways, and throw with any degree of force either way, never failed to fasten upon the instant shoot of the bolt when opposite the mortise. This improvement is little, if any, more costly than the ordinary fastenings, which are generally of small account and not to be depended on.

**A NEW QUARTZ MILL INVENTION.**—The Helena (Montana) *Gazette* describes a new quartz mill invention recently devised by some party, name not given, in that place. A model of the same was on exhibition at the house of Tutt & Donnell. The stamps have additional force imparted to them by wooden springs, and strike the quartz obliquely, thus giving a grinding as well as crushing force. The device is said to be very simple and cheap, and is soon to be put to a practical test. The "wooden spring" arrangement is an old idea, never yet, however, found practicable. How the obliquely strike is given, is not stated. If it can be done without unusual wear to the machinery, it might be economical.

**A FIRE INDICATOR.**—Among the recent improvements having in view the safety of life and property from fire, an ingenious device by Mr. Charles Dian, of Montreal, Canada, is especially mentioned. It consists of a small dial, something like a clock face, hung up in a sleeping apartment or sitting room, from which wires extend to the various rooms of the building, and all connected with one or more alarm bells. The instant any one of these wires is unduly heated an alarm is given by the bells, and the dials—there may be any number of them—point out the exact locality of the fire. Such an invention must be valuable for hotels and large buildings. They are being introduced into some large buildings in Canada, and the Board of Fire Underwriters of New York have officially certified to the striking merit of the invention, strongly urging its general introduction in that city.

**WARMING CITY RAILROAD CARS.**—A plan has been suggested in New York for warming city railroad cars, an object very desirable in the northern and eastern cities for the health and comfort of passengers. The plan is as follows: Metallic or other tubes, of sufficient size and weight, are filled with heated sand at the depot before the cars start, and are laid into chambers under the floor or seats, and out of the way and out of sight. These give a comfortable amount of heat during the direct and return trip, when the sand is again renewed, and the comfort and health of the passengers, drivers and conductors are thus secured while on the cars, for the pipes extend out under the driver's feet and back to where the conductor stands. This is no theoretic plan, but a working device in use on the railways in Northern Germany.

**LIGHTING FIRES BY GAS.**—An invention has recently been made in England called the "gas fire-igniter," which is intended as a substitute for wood and paper in lighting fires. A row of three gas-burners is fitted on below and behind the grate bottom, with a tap at one side, so that when a fire is wanted the gas is lit, and the flame passing amongst the coals sets fire to them without the aid of wood or paper. In summer, water can be boiled by the gas alone, as by an ordinary gas fire.

**SALE OF THE NEW ALMADEN MINE.**—A deed conveying this mine was recently made by the Philadelphia trustees to certain parties in New York. The consideration expressed was \$3,500,000. It was filed for record in San José. The transfer does not involve a change of ownership of the mine, but is made in order to escape the heavy taxes upon incorporations in Pennsylvania.

**METALLIC SIGNS.**—We paid a visit some few days since, to the workshop of Andrade & Patterson, on the corner of Montgomery and Pine streets, for the purpose of seeing the *modus operandi* of manufacturing the new and elegant style of signs being introduced here by them, which they call metallic signs. Many of our readers have no doubt noticed some of these attractive embellishments on many of the stores on Montgomery and other leading streets. The material of which these signs are made is thick sheet zinc, which the proprietors import from the East expressly for the purpose. The metal is first cut to the required size, and then nicely flattened and cleaned off. The design is then made upon paper, and traced upon the zinc; the next thing is to outline, as it is called; this is done by means of a sharp steel chisel and hammer, and the shape of the letters or design of the sign, is cut in about one-sixteenth of an inch deep; it is then given into the hands of another workman, who with a different kind of chisel cuts out the body of the letters; after this it is trimmed up, and any fancy ornament or border is engraved. It is then given into the hands of a third person to be polished. This is a long and laborious process; but the sign is finally turned out as bright as a mirror. The next thing is the hending, (for most of these signs are circular), which is followed by the process of filling in; that is, filling the letters, which have been cut out level with the surface of the metal. For this purpose they manufacture a kind of cement, which is soft and black, but which after a short time becomes quite hard. The sign is then screwed to a wooden frame, with brass screws, which form quite a pretty contrast to the brightly polished zinc. This completes the manufacture of the most attractive, and most durable kind of sign ever introduced; it is attractive because of its brightness, and we are assured by the manufacturers that one of these signs cannot be reasonably worn out in an ordinary lifetime.

This description of signs was first introduced in New York some six years ago, and so well have they been appreciated, and so liberally patronized, that there is scarcely a store on Broadway without one or more of them; in fact there are at the present time some thirty men continually employed there in this business. We inquired the prices and find them to be very reasonable, not greatly in advance of an ordinary painted sign, while they are assuredly much more attractive and ten times as durable.

We were glad to see both partners were actively engaged in the mechanical part of the trade. They are also making door plates of this kind of metal which look very nice, and cost only about one-half the price of silver-plated ones.

Previous to the arrival of Mr. Andrade in this city, many persons so felt the necessity of these signs that several were imported from New York, and many will no doubt also be pleased to learn that this has now become an established business in this city, and join us in the hope that Messrs. Andrade & Patterson may meet with that success which their enterprise undoubtedly merits.

**ANOTHER OF THE LUCKY ONES.**—The Denver *Gazette* says that young "Jim Whitlatch" is in this city, en route for the Paris Exposition. He is owner of the most famous mine in Montana—the Whitlatch Union, which is yielding an average of \$8,000 per week. He declares that he intends to take to the Exposition the first \$100,000 turned out by the mine. Young Whitlatch was at one time the owner of a good silver mine in Nevada.

**BUSSEY'S NEW SAFE LOCK.**—Amador County has semi-officially adopted this new combination lock, by having one with four bolts attached to the treasury vault. The County Treasurer speaks emphatically in favor of this California invention, after testing its value by practical use. A correspondent writes that Mr. Bussey sold all the locks he had on hand, during his late visit to that county.

**HUMBOLDT OIL WELLS.**—The Irwin Davis well, Mattole, was abandoned at the depth of 1,450 feet.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board  
SAN FRANCISCO, SATURDAY MORNING,  
May 4, 1887.  
CITY STOCKS.

City shares have been exceedingly inactive, and sales at the Board embrace a limited amount of business in this class of securities. Much of this inactivity may be attributed to the continued upward tendency of the entire list of mining stocks. Spring Valley Water sold at \$67 per share. Cal. Steam Nav. Co. sold at 71 per cent. early in the week, and at the close 70 is bid. North Beach and Mission R. R. realized \$49.50 per share. Pacific Ins. Co. sold at \$125 to \$126. The San Francisco Gas Co. paid its usual monthly dividend of  $\frac{1}{2}$  per cent. on the first inst., amounting to \$30,000. We quote this stock at \$66.50 bid and \$67.50 asked.

We learn from the Secretary that the Front Street, Mission and Ocean Railroad Company held a meeting on Tuesday evening, at which it was unanimously agreed to issue additional stock sufficient to pay their debts. Some \$21,000 worth of the new stock was subscribed at this meeting, and stockholders will have an opportunity to take seven additional shares to every ten they now own, if subscribed within twenty days.

The sales in the Stock and Exchange Board during the month of April have been as follows: April, 1884, \$2,649,072; April, 1885, \$4,339,032; April, 1886, \$4,038,096; April, 1887, \$5,593,016.

## MINING SHARE MARKET.

The mining share market has been characterized by a marked degree of animation during the past week, and great firmness, at an advance, prevails in most shares at the close.

**HALE & NORCROSS**—continues out of the market. We are informed that this mine is looking better as the different breasts are being opened. Air is now forced into the south breasts on the 780 foot level, and they are now raising up to connect with the 700 foot level for the purpose of obtaining ventilation. They are also running a drift on the 700 foot level, directed to this point, to connect with the "raise" below.

**SAVAGE**—has advanced rapidly over our previous quotations, opening at \$2,825, improving to \$3,060, then selling at \$3,030, rising to \$3,280, and closing yesterday at \$3,270. During the week ending April 27th, 1,806 tons of ore were taken from the mine, showing an assay value of \$80,907, equal to \$44.79 per ton. The yield of the previous week gave an assay value of \$32.32 per ton. The upper works produced 55 tons, sixth station 264 tons, seventh station 677 tons, and Curtis' shaft 810 tons. For several weeks past ore has been taken from the seventh station breasts through the Curtis shaft, showing that the above amount did not entirely come from the south mine.

Since our last reference suitable mine timber has been obtained, and work has been resumed in the various breasts. The Curtis shaft is now over sixty feet in depth from the third or new station, and is said to be in very favorable ground for sinking. We learn that the drifts from the third station are making good progress toward the lead. It is confidently stated that this company will declare a dividend of \$150 per foot out of the earnings of last month, besides carrying forward a large surplus. In the United States District Court, at Carson, Nevada, on the 2d inst., the case of Thornburgh vs The Savage Company, after a two days' trial, was decided by the jury in favor of the defendants.

**CROWN POINT**—has exhibited great firmness under a sharp advance, rapidly improving from \$1,460 to \$1,700, receding to \$1,645, jumping to \$2,000, and closing yesterday at \$1,950 b. 3. Some 626 tons of ore were extracted from the mine during the week ending April 26th—42 tons of which came from the new development in the 500-foot level. We learn that slow progress is being made in opening north and south on the east vein, owing to the hardness of the rock; however, the mine is said to look very favorable at this point.

**YELLOW JACKET**—has been in the market to a considerable extent, advancing from

\$1,335 to \$1,600, then realizing \$1,520 to \$1,575, and closing at \$1,675. Information has been received by telegram from the Gold Hill office of this company that they had \$205,000 in hand on the first instant.

**CHOLLAR POTOSI**—has been exceedingly active since our last reference, at greatly enhanced figures, jumping from \$500 to \$662, and closing at \$635, seller 30. The Blue Wing station is said to be looking much better in the "raise," and breasting is being continued to the north in fire ore. The second winze in this station is down fifty feet, and is also said to be in good ore. We understand that the old Santa Fe continues good in going north. Another winze is being sunk from this station to the lower Santa Fe, which has attained a depth of about 30 feet, and is reported to be in good ore. The body of ore in the north end of the first station, from the new shaft, is said to have increased in size, but as yet shows no improvement in quality. The shipments of ore to custom mills, during the week ending April 27th, have been as follows: From the Potosi mine, 2,999 tons; new shaft, 468 tons. Total, 3,467 tons—previous week, 2,400 tons. This company at present gives employment to 273 men at the mine, and requires fourteen mills for the reduction of its ores.

**GOULD & CURRY**—advanced from \$500 to \$590, receded to \$535@520, improved to \$550, and closed yesterday at \$500. We learn that the bottom of the Bonner shaft is in better ground, and that work at that point is progressing more rapidly. The south drift from the fifth station is still in hard ground. The north-east drift on the fourth station has been commenced, and they continue to work to the east on the sixth station. The bullion received at the San Francisco office in the month of April amounted to \$63,130.19.

**OPHIR**—improved from \$382.50 to \$460, declined to \$410, rallied to \$475, and closed at \$420. The tenth station drift south is in 130 feet, and the north drift, on the same level, is in 30 feet. The first cross-cut is now being run through the ledge.

**ALPHA**—sold within a range of \$425 to \$460. BELCHER has been in active demand under a very marked advance, improving from \$320 to \$405, then selling at \$350@340, and closing at \$440.

**IMPERIAL**—opened at \$272.50, rose to \$280, receded to \$274, and closed yesterday at \$277.50. The bullion received at the office in this city up to the 23d ult. amounted to upwards of \$49,000. The Imperial-Empire shaft is timbered to the depth of 872 feet.

**EMPIRE**—is not included in the list of stocks which have lately exhibited such a rapid appreciation, selling within a range of \$193 to \$202, and at the close obtaining \$194.

**CONFIDENCE**—sold to a large extent, opening at \$59, seller 30, rising to \$70, then selling at \$58 to \$67.50, and closing at \$66.50. GOLD HILL Q. M. Co. sold at \$180@165, and KENTUCK at \$200 per share.

**BULLION**—changed hands more freely than for some time past, advancing from \$50 to \$82.50, falling to \$60@40, and at the close realizing \$55. OVERMAN rose from \$42 to \$49, declined to \$43, and closed at \$48. SIERRA NEVADA advanced from \$14 to \$20, then sold at \$15, and at the close \$15 is asked. The latest accounts from this mine are to the 20th of April. The water in the shaft has been reduced 500 feet, and they then commenced to erect the plunger pump to drain the levels. It is expected that the water will all be drained out before the 1st of June, and thenceforward the work will progress on the ledge struck last fall. The twenty-eighth assessment is being paid up, and will become delinquent on the 14th inst. The sale of delinquent stock will take place on the 30th inst.

**EXCHEQUER**—advanced from \$8 to \$18, receded to \$9, then sold at \$12.50, seller 3, and closed yesterday at \$12. DANEY sold at \$9@12. GOLDEN RULE (Cal.) sold at \$16, seller 30, per share.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,895,823.

## Allen's Lung Balsam.

Remarkable cure of the daughter of Robert Lawrence, Esq.

NEWYORK, Ky., June 1, 1887.—Gents:—I will give you a statement of the wonderful medicinal properties of ALLEN'S LUNG BALSAM. My daughter was attacked with a cold, which settled on her lungs. A severe cough was the consequence, which so harassed her that she became much reduced. She had great pains in her side and breast, attended with cold chills and night sweats. She raised more than a pint of matter a day. Finally her lungs became ulcerated, her hands and feet were cold and clammy as death. Her physician, having failed to give any permanent relief, said that he could not do anything more for her; that she must soon die. At this time I procured Allen's Lung Balsam, which caused her to raise large quantities of matter and phlegm. When this was expectorated, her appetite and strength gained rapidly, and her cough in a short time ceased, and now she is a most extraordinary trophy of the medicinal properties of Allen's Lung Balsam.

Respectfully yours, ROBERT LAWRENCE.  
Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.  
Sold by all Medicine Dealers everywhere. 1874-1m



## List of Officers of Corporations and Mining Companies.

(PUBLISHED IN THE FIRST ISSUE OF EACH MONTH)

[Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.]

**ALAMEDA COAL CO.**—January 14th. Trustees: B. Dean, B. Eugene Anger, A. Wapler, W. B. Agard and P. McMahon. President, B. Dean; Secretary, A. Wapler; Treasurer, B. Eugene Anger; Treasurer, A. T. Ladd. Office, 704 Sansome street.

**DANEY G. & S. M. CO.**—April 15th. Trustees: W. W. Palmer, H. A. Fox, W. B. Johnston, E. J. Pringle, H. L. Henschel, A. Pavillier and Jas. Paterson. President, W. W. Palmer; Vice President, H. A. Fox; Secretary, A. Noell. Office, 607 Washington street.

**FRANCO AMERICANA S. M. CO.**—April 16th. Trustees: J. Landsberger, H. Schulmann, J. Regensburger, B. Broderson, Jno. Stock. President, J. Regensburger; Secretary, Angelo Cohn; Treasurer, H. Schulmann; Superintendent, F. Ernst. Office, 652 Washington street.

**HOPE GRAVEL M. CO.**—April 23d. Trustees: W. A. Bateman, C. W. Ham, B. C. Howard, F. Madge and Lewis Teese, Jr. President, Lewis Teese, Jr.; Secretary, David Wilder; Treasurer, B. C. Howard; Superintendent, H. J. Paine; Foreman at the mine, Sam'l Locke. Office, 529 Clay street.

**NEW IDRIA M. CO.**—April 29th. Trustees: Wm. E. Barron, Thomas Bell, D. O. Mills, Joseph Barron and W. H. L. Barnes. President, Wm. E. Barron; Secretary, John S. Brodie; Treasurer, Bank of California; Superintendent, Wm. Neely Thompson. Office, at Barron & Co's.

**NEW INCORPORATIONS.**—The following companies have filed their certificates of incorporation since our last issue:

April 28th.—Fillmore Homestead Association. Capital stock, \$16,000, in 40 shares of \$400 each. Trustees: T. S. Russell, W. H. Saery, C. J. Ladd, John A. Nye, Wm. Francy, J. L. Jones and Wm. Hollis.

April 28th.—California Manufacturing and Commercial Company. Place of operations, Nicaragua. Capital stock, \$150,000, divided into 1,500 shares of \$100 each. Directors in San Francisco: R. F. Ryan, Daniel Murphy, Capt. J. H. Blethen, John McKee, Peter Ward, Arthur Quinn, and Felix O'Rourke. In Nicaragua: Henry Gottell, Esq., Rivas; Padre Acosta, San Jose; Victor Mestayer, Granada; Yidefonso Vivas, Granada; Don Chico Munoz, Leon; A. H. Maduro & Co., Leon; Ex-President, Thos. Martinez, Managua.

May 2d.—Philadelphia Slide Gold Mining Company. Location of mine, El Dorado Co. Capital stock, \$300,000; 3,000 shares of \$100 each. Trustees, S. Klein, H. Greenwood, E. R. Hawley, A. H. Bailly and E. H. Taft.

**PACIFIC STRAW WORKS.**—We took occasion, a few days since, to visit the Pacific Straw Works, No. 335 Bush street, one of the principal objects of which is the renovation of hats and bonnets that have grown out of fashion or become somewhat "worse for the wear." The number of the different kinds of articles, "made as good as new" in a single month, will sometimes reach 8,000; giving employment to about forty persons at fair wages. Almost everything required to carry forward the work, even to the blocks of plaster, wood and iron, is made in the establishment. It has three distinct departments, one for renovating, another for coloring, and a third for the manufacture of the hat and bonnet frames, with elevators for carrying the work from one story to another as needed. The steps in the process of the operation may be stated in about the following order: The different articles in their dilapidated or soiled condition are received, usually from the milliners, and then numbered, picked clean of the threads and linings, mended, altered to the prevailing style of fashion, washed, bleached and dried in the sun; then stiffened or sized, again dried, steamed, blocked into proper shape, pressed and finished for delivery. The process of making the frames, which are of wire and buckram imported from New York, is not quite so tedious. They are cut to the desired size, softened in water, put under iron forms heated with gas and then pressed to the proper form by machinery. A large amount of this class of work is done here, and in much better style than similar work from the East.

## MINING SHAREHOLDERS' DIRECTORY

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location, Amount and Date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DELINQUENT DAY OF SALE.
Abernethy, Virginia, Nev., March 25, \$5. April 25—May 27	
Adella, Sierra Co., Cal., April 9, \$5. May 9—May 27	
Arizona Cons., Arizona Terr., Annual Meeting, May 6	
Big Blue Lead, Kern Co., Cal., Feb. 19, \$4. April 2—May 22	
Belcher, Virginia, Nev., March 24, \$12. April 25—May 27	
Belcher M. Co., Vir., Nev., March 25, \$3. April 25—May 27	
Haldwin, Vir., Nev., March 25, \$3. April 25—May 27	
Butolinas, Chihuahua, Mex., April 11, \$2. May 16—June 3	
Cinco Senores, Simola, Mex., May 1, \$5. May 31—June 22	
Central, Idaho, Annual Meeting at Hakind, May 6	
Chick Mountain, Nev. Co., Cal., May 1, \$5. June 1—June 10	
Cosala, Simola, Mex., May 12, \$1. April 15—May 7	
Camargo, Lander Co., Nev., Feb. 11, \$3. May 29—May 31	
Chilpancingo, Sonora, Mex., April 5, \$5. May 1—May 30	
Cherokee Flat, Butte Co., April 10, \$5. May 14—June 5	
Crown Point, Nev. dividend \$9. Payable April 15	
Confidence, (O. B.) Nev., April 23, \$10. May 29—June 19	
Dinna, Lander Co., Nev., March 22, \$5. May 3—June 4	
Durand, Nevada, Nev. Co., Cal., May 1, \$5. June 1—June 10	
De Soto, Humboldt Co., Nev., April 25, \$5. June 1—June 10	
Daney, Lyon Co., Nev., April 25, \$5. May 30—June 17	
Evoca Cons. Cop., Del Norte Co., Annual Meeting, May 23	
Eureka Coal M., Alameda Co., Annual Meeting, May 4	
Empire M. & M., Nev., May 1, \$5. June 1—June 10	
Forest Springs, Orass Valley, Cal., May 15, \$40. Apr. 13—Apr. 30	
Francisco Americana, L. C., April 22, \$5. May 24—June 4	
Golden Rink, Tuolumne Co., div. 50¢ per sh. Payable May 1	
Gould & Curry, Virginia, Nev., dividend \$30. Payable Jan 8	
Gold Quarry, Placer Co., Nev., Feb. 21, \$5. April 22—May 13	
Gold Hill, Alpine Co., Nev., March 15, \$5. May 1—May 30	
Gold Hill Quartz Co., Dividend, \$10—Payable April 9	
Hope Gravel, Nev. Co., Cal., April 15, \$1. May 23—June 11	
Hale & Norcross, Virginia, Nev., div. \$125. Payable April 15	
Hanscom Cop., Del Norte Co., March 4, \$5. May 3—May 20	
Imperial, Virginia, Nev., div. \$15. Payable April 15	
California, Sierra Nevada, Nev., April 15, \$5. May 1—May 30	
1st L. Alpine Co., Cal., April 20, \$150. May 1—May 30	
Julia, Storey Co., Nev., May 14, \$1. April 18—May 8	
Lady Franklin, Alpine Co., May 2, \$30. June 10—July 22	
Keystone M., Calaveras Co., Feb. 20, \$10. April 29—May 20	
Kemuck, div. \$150. Payable April 10	
Kelly G. & S., El Dorado Co., Apr. 4, 15 c. May 18—June 15	
Los Cruces, Sonora, Mex., Annual Meeting, May 15	
Lyon M. & C., El Dorado Co., Apr. 3, \$2. May 14—May 18	
London Quartz Mining Co., Special Meeting May 4	
La Blanca, Sonora, Mex., April 25, \$2. May 25—June 10	
North Star, Lander Co., Nev., May 14, \$5. April 24—May 15	
Savanna, Sonora de Guadalupe, Mex., \$1. April 17—May 11	
Overman, Storey Co., Nev., May 12, \$10. April 18—May 11	
Pacific, Nevada, Nev., April 26, \$3. May 1—May 30	
Peninsula, L. C., April 23, \$5. May 1—June 15	
Rattlesnake, Yuba Co., March 22, \$1. April 25—May 14	
Rippon, Alpine Co., Cal., Annual Meeting May 27	
Rippon, Alpine Co., Cal., April 22, \$9. May 27—June 17	
Shoshone S. M., dividend, \$1 per share. Payable March 14	
Savage, Virginia, Nev., dividend \$100. Payable March 8	
Smoky Valley, dividend, \$100. Payable Feb 1	
San Francisco City Bonds, 1851. 100 102	
San Francisco City Bonds, 1855. 83 95	
San Francisco City and County Bonds, 1856. 72 74	
San Francisco City and Co. Bonds, 1856. 80 84	
San Francisco City and Co. Bonds, 1857. 80 84	
San Francisco City and Co. Bonds, 1858. 80 84	
San Francisco City and Co. Bonds, 1859. 80 84	
San Francisco City and Co. Bonds, 1860. 80 84	
San Francisco City and Co. Bonds, 1861. 80 84	
San Francisco City and Co. Bonds, 1862. 80 84	
San Francisco City and Co. Bonds, 1863. 80 84	
San Francisco City and Co. Bonds, 1864. 80 84	
Sacramento City Bonds, 1856. 62 65	
Sacramento County Bonds, 1856. 62 65	
Marysville Bonds, 1856. 75 85	
Stockton City Bonds, 1856. 80 95	
Yuba County Bonds, 1856. 75 85	
Santa Clara County Bonds, 1856. 75 85	
Butte County Bonds, 1856. 70 75	
San Mateo County Bonds, 1856. 70 75	
California Steam Navigation Co., 70 75	
Spring Valley Water Co., 29 30 1/2	
State Telegraph Co., 29 30 1/2	

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, May 3, 1857.	
MISCELLANEOUS STOCKS.	Bid. Asked.
United States 7-10ths Bonds, June issue.....	79 1/2 80 1/4
Local Tender Notes.....	75 76
California State Bonds, 1856.....	75 76
San Francisco Bonds, 1851.....	100 102
San Francisco City Bonds, 1855.....	83 95
San Francisco City and County Bonds, 1856.....	72 74
San Francisco City and Co. Bonds, 1856.....	80 84
San Francisco City and Co. Bonds, 1857.....	80 84
San Francisco City and Co. Bonds, 1858.....	80 84
San Francisco City and Co. Bonds, 1859.....	80 84
San Francisco City and Co. Bonds, 1860.....	80 84
San Francisco City and Co. Bonds, 1861.....	80 84
San Francisco City and Co. Bonds, 1862.....	80 84
San Francisco City and Co. Bonds, 1863.....	80 84
San Francisco City and Co. Bonds, 1864.....	80 84
Sacramento City Bonds.....	62 65
Sacramento County Bonds.....	62 65
Marysville Bonds.....	75 85
Stockton City Bonds.....	80 95
Yuba County Bonds.....	75 85
Santa Clara County Bonds.....	75 85
Butte County Bonds.....	70 75
San Mateo County Bonds.....	70 75
California Steam Navigation Co.....	70 75
Spring Valley Water Co.....	29 30 1/2
State Telegraph Co.....	29 30 1/2
GAS COMPANIES.	
San Francisco Gas Co.....	66 1/2 67 1/2
Sacramento Gas Co.....	67 1/2
RAILROADS.	
Sacramento Valley Railroad.....	40 45
San Francisco and San Jose Railroad.....	40 45
Omnibus Railroad.....	54 60
Central Railroad.....	40 45
North Beach and Mission Railroad.....	49 50
Front Street, Mission and Ocean Railroad.....	49 50
BANKING INSTITUTIONS.	
California, Loan and Savings Society.....	—
Bank of Pacific Accumulation Loan Society.....	—
The Bank of California.....	135 136
INSURANCE COMPANIES.	
Fireman's Fund Insurance Co.....	98 102
Pacific Insurance Co.....	125 131
San Francisco Insurance Co.....	125 131
Merchants' Mutual Marine Insurance Co.....	400 475
California Insurance Co.....	1550 1750
Union Insurance Co.....	102 110
Central Home Insurance Co.....	90 95
Honolulu Mutual Insurance Co.....	90 95
National Insurance Co.....	74 75
MINING STOCKS—WASHOE DISTRICT.	
Alpha.....	410 450
Baltimore American.....	—
Belcher.....	40 45
Bullion.....	55
Crown Point.....	1925 1950
Confidence.....	61 68
Chollar-Potosi.....	635 640
Excelsior.....	11 12
Empire Mill and Mining Co.....	192 195
Houd & Curry.....	540 550
Hale & Norcross.....	350 360
Imperial.....	275 280
Lady Bryan.....	—
Ophir.....	415 425
German.....	40 45
Savage.....	3240 3275
Yellow Jacket.....	1630 1640
Golden Rule, California.....	17 20

## San Francisco Market Rates.

Wholesale Prices.

FRIDAY, May 3, 1857.	
Flour, Extra, per bbl.....	\$6 00 @ \$7 25
Do, Superior.....	5 00 @ 6 00
Corn Meal, per 100 lbs.....	2 00 @ 2 25
Wheat, per 100 lbs.....	1 60 @ 2 20
Oats, per 100 lbs.....	1 00 @ 1 15
Barley, per 100 lbs.....	1 00 @ 1 15
Beans, per 100 lbs.....	2 00 @ 2 50
Potatoes, per 100 lbs.....	1 25 @ 1 75
Lard, per ton.....	8 00 @ 12 00
Live Oak Wood, per cord.....	9 00 @ 10 00
Beef, on foot, per lb.....	7 1/2 @ —
Beef, extra, dressed, per lb.....	9 @ 10

Sheep, on foot.....	4 00 @ 5 00
Hogs, on foot, per lb.....	6 @ 7
Hogs, dressed, per lb.....	10 @ —
GROCERIES, ETC.	
Sugar, crushed, per lb.....	13 1/2 @ 14
Do, China.....	9 @ 10
Coffee, Costa Rica, per lb.....	21 1/2 @ —
Do, Rio.....	21 1/2 @ —
Tea, Japan, per lb.....	70 @ 55
Do, India.....	64 @ 1 25
Hawaiian Rice, per lb.....	9 @ —
China Rice, per lb.....	5 1/2 @ 6 1/2
Com Oil, per gallon.....	60 @ 65
Candles, per lb.....	15 @ 16
Ranch Butter, per lb.....	20 @ 21 1/2
Butter, California, per lb.....	15 @ 16
Eggs, per dozen.....	23 @ 30
Lard, per lb.....	13 1/2 @ 14
Lard and Bacon, per lb.....	14 @ 17
Shoulders, per lb.....	8 @ 12 1/2

## Retail Prices.

Butter, California, fresh, per lb.....	30 @ 40
Do, pickled, per lb.....	25 @ 30
Do, Oregon, per lb.....	15 @ 20
Do, New York, per lb.....	15 @ 20
Cheese, per lb.....	15 @ 20
Honey, per lb.....	30 @ 40
Eggs, per dozen.....	30 @ 35
Potatoes, sweet, per lb.....	5 @ 10
Onions, per lb.....	15 @ 20
Crabapples, per gallon.....	1 00 @ 1 25
Potatoes, per lb.....	2 @ 3
Tomatoes, per lb.....	1 @ 2
Onions, per lb.....	3 @ 5
Apples, No. 1, per lb.....	4 @ 5
Do, No. 2, per lb.....	3 @ 4
Plums, dried, per lb.....	15 @ 15
Peaches, dried, per lb.....	11 @ 13
Oranges, per dozen.....	25 @ 30
Chickens, per dozen.....	50 @ 75
Turkeys, per lb.....	20 @ 25
Soap, Palm and C. O., per lb.....	8 @ 10 1/2
Soap, Castile, per lb.....	15 @ 18

**MINING MACHINERY.**—We are informed that three of J. H. Stewart's Hinge Mullers have been recently sent to the interior—one to the Oriental mill and mine at Wisconsin Hill, Placer county—the others to the Pyramid mine near Rose Spring, White Oak township, El Dorado county, for the new quartz mill of Angel Brothers, which is now nearly completed. A very good idea as to the construction and merits of these new mullers, can be formed from the cut and description found in another column, or they can be seen at the Miners' Foundry, where they are being built.

**EXPLOSION OF A RETORT.**—At the Excelsior mill between Silver City and Dayton, Nevada, a retort containing 400 pounds of amalgam exploded the other day, scattering the precious stuff in every direction. The heavy iron cylinder was blown to atoms. Strange to say, the superintendent, who was near, was only slightly injured. The cause of the explosion was undoubtedly the clogging of the pipe.

**WE ARE NOW OFFERING OUR IMMENSE STOCK**  
—OF—  
**Fine Custom Made Clothing**  
—AND—  
**Gents' Furnishing Goods**  
**AT PRICES THAT DEFY COMPETITION.**  
Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**  
—BOTH OF MATERIAL AND FINISH.

**J. R. MEAD & CO.,**  
Cor. of Washington and Sansome streets.  
8v10

**STEAM**  
**Family Chartres Coffee**  
**AND SPICE MILLS.**  
Established July 1, 1856.  
**FIRST PREMIUM**  
Awarded by the Mechanics' Fair, 1855, for the best Coffee and Spices.

**CHARLES BERNARD,**  
MANUFACTURER OF AND DEALER IN  
**Family Chartres Coffee**  
—AND—  
**SPICES OF ALL KINDS,**  
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SAN FRANCISCO.

Goods of the best quality. Has no fear of Counterfeits—each package bears the signature of  
**C. BERNARD.**  
Has never employed any Chinese Labor.  
15v14c0p3m

## Professional Cards.

**SHERMAN DAY,**  
**Mining Engineer,**  
No. 114 Montgomery Block, San Francisco,  
Will examine, survey and report upon mines, and consult and advise concerning investments in mining property, or the machinery management and expenditures of mines.  
2v9

**CHAS. LIEBENAU,**  
**Mining Engineer and Metallurgist,**  
(Graduate of the Mining Academy, Freiberg, Germany.)  
Oro, Flint District, Owyhee Co., Idaho.  
References.—George Hearst, John W. Oashwiler, Liebenau & Co., and J. M. McDonald, San Francisco; E. R. Purple, New York; William Bigler, Penn.  
14v14-3m\*

**FREDERICK MANSELL,**  
**Mechanical & Architectural Draughtsman,**  
No. 422 California street, corner of Laidlaw.  
Drawings of Monuments made for parties applying for patents at Washington or London.  
mar23-1v

**GREGORY YALE,**  
**Attorney and Counsellor at Law,**  
No. 19 Merchants' Exchange,  
(Battery and Washington streets.)

Special attention given to obtaining Patents for Mining Lodes under the Act of Congress of July 26th, 1866; and Claims filed before the U. S. Registers and Receivers in any of the Land Districts in the State, and Contests before the Courts, under the Law, attended to. Opinions prepared upon all questions relating to Mining Laws.  
1v14-1m

**E. V. JOICE,**  
**NOTARY PUBLIC,**  
N. E. cor. of Washington and Battery sts.  
12v14H SAN FRANCISCO.

**GEO. T. KNOX AND E. V. SUTTER,**  
**COMMISSIONERS OF DEEDS.**  
**NOTARY PUBLIC,**  
615 Montgomery Street,  
16v14H San Francisco.

**W. E. GOLDSMITH,**  
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SAN FRANCISCO.  
Wedding and Visiting Cards printed with the utmost neatness; Notarial, Commissioner and Society Seals.  
19v13-2q

**DR. H. AUSTIN,**  
**DENTIST,**  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
(OVER SAN FRANCISCO BATHS)  
SAN FRANCISCO.  
20v10-4y

**DR. A. HARTMAN,**  
**Electro-Magnetic Physician.**  
CURES ALL CURABLE DISEASES, BY THE CONCENTRATION of the vital forces. Nature's own method of cure. The blind made to see, the deaf to hear, the lame made to walk, and the sick healed. Come and see the afflicted at the rooms. They will speak for themselves. The poor treated free from 10 to 11 A.M. and 4 to 5 P.M. Operating rooms, 410 Kearny street, between Pine and California.  
21v13m

**JACOB SHEW,**  
**Pioneer Photographer,**  
612 Clay street, north side, four doors above Montgomery.  
(Late 315 Montgomery street.)  
Takes all kinds of Photographs in the best style of the Art. He would draw the especial attention to the new "Cabinet Photographs," which he is taking to perfection.  
10v14H

**BLAKE'S PATENT**  
**QUARTZ CRUSHER.**  
**CAUTION!**  
The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1866.  
This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.  
All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other material is crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.  
Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified in advance. Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.  
BLAKE & TYLER,  
14v14H Agents for the Pacific Coast.

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**Constitution and By-Laws**  
—FOR—  
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**Mining and Scientific Press.**  
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## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of April 25th: Five tons of Tarshish ore was taken this week to Nevada to be worked, with the firm belief that the yield will be at least \$500 per ton. In crossing the ledge, 17 ft. has been made without reaching the west wall.

The results obtained in the I. X. L. have not been flattering. The company are now satisfied that they must attain a greater depth before they can expect anything permanent; and now contemplate extending the tunnel some 500 ft. further into the mountain, with hopes of striking another chimney.

## Amador County.

From the *Ledger* of April 27th: The Oneida is daily improving in richness and quantity of rock. Last Monday, Mr. Reichling cast a brick for them worth \$9,000, the result of 11 days' work of the mill.

Coney & Bigelow have commenced the erection of their chlorination works.

Letter from Volcano: The Italian or Sorocco mine is paying well. So also the Paugh. The Vaughn is yielding large dividends to Fogus & Co. The Golden Gate is being worked with satisfactory results. Prospects of the Belding and Pioneer mines are flattering. There are no less than 70 different companies engaged in placer mining in the basin and immediate neighborhood, and that too with success.

## Calaveras County.

From the San Andreas *Register* of April 27th: The excitement at Cat Camp has reached fever heat. It is represented that the ground, for an area of 10 miles square, is very rich.

Letter to same from "Jumperville, Mokelumne Rich Gulch," April 20th, says: The mill that was announced as being nearly completed more than two months ago, and when scarcely any steps had been taken, is now approaching completion. It is expected to be finished sometime in May. I understand that another quartz mill will be built during the approaching summer.

From the Copperopolis *Courier* of same date: Messrs. Cronise & Co., late purchasers of the big reservoir in Salt Spring Valley, and also the Hughes quartz mine, at Quail Hill, have had a survey made and are about to let a contract for digging a ditch, running from the big reservoir to the Hughes mine. The ditch will be eleven miles in length and of capacity to carry 200 in. of water, and will be completed within 65 days. By building reservoirs along the line of the ditch, it will supply the Gopher placer mining with water. This district has never been worked to any great extent on account of a scarcity of water. This company are about to build a 20-stamp mill at the Hughes mine, which will be erected with the utmost despatch.

## El Dorado County.

From the Placerville *Courier* of April 27th: A day or two ago Mr. Raphet, a merchant at Newtown, brought into our office a nugget of solid gold weighing 36 ounces, taken out of the claim of two Germans known as Joe and Chris, between the North and South Forks of Weber creek.

Mr. Shepherd has shown us another beautiful specimen of rock from his claim at Poverty Point.

From the *Democrat* of same date: We receive favorable accounts from Fairplay, Newtown, Kelsey, Georgetown, Spanish Dry Diggings and the mines in our immediate neighborhood. A large belt of rich-mining ground some miles east of Placerville is lying idle for want of water. Among the rich claims of the county is Hugh B. Newell's, at Gold Hill, near Coloma. Out of 22 days' washing he cleaned up, a few days ago, \$3,800. In the vicinity of his claim is the rich White Eagle quartz lode, owned by Charles Grainer, and several other ledges, which show fine prospects.

## Fresno County.

From the Mariposa *Mail* of April 27th: Nat Harbert and Wm. Miller returned from the Fresno on Monday evening. The ledge they are working is seven feet in width at the depth of 15 ft., and the rock not only shows gold but prospects rich. Messrs. Harbert, Miller and Rogers are the owners, and intend building a mill this summer.

## Kern County.

Messrs. Thomas & Taylor, superintendents of Harrold's mine (better known as the Burning Moscow), in the new El Dorado Dist., have made a clean-up of average rock, which yielded, by the arastra process, \$24.85 per ton. They have gone down 75 ft., at which depth the ledge is from three

and a half to four ft. wide. An 8-stamp mill will be in operation within 30 days. There is an inexhaustible supply of water, and the expense of working the rock will not exceed \$5 per ton.

The property of the Kern River Gold and Silver Mining Co. is advertised for sale by the Sheriff.

## Mariposa County.

From the *Gazette* of April 20th: On the left bank of the Middle Fork of the Merced, Messrs. Berdow, Snediker & Hennessy have struck a vein which shows free gold in almost every fragment. They are prospecting it in Stanley's arastra. The same party struck a vein on the right bank also, which worked, in Ferguson's mill, \$40 per ton. . . . Ferguson & Co. are crushing rock that averages \$100 per ton as fast as their eight-stamp mill will do it. . . . At Ned's Gulch, W. Coleman & Co. are running their arastra on rock which averages \$150 per ton. . . . Jenkins & Co. are crushing at the Mount Hope mill. Their rock is uncommonly rich, but base metals abound. . . . A. G. Black, Sheehan and Jerry Davis are developing a magnificent vein, 16 ft. wide, at the Burnell cabin. It pays \$20 per ton in a little old rotten mill. . . . On Bull creek, Messrs. Lamh & Co. have a small but very rich vein. . . . The Crown Lead mill has been idle for two years.

From the Mariposa *Mail* of April 27th: It is said that work will be resumed immediately on the Princeton mine, with a force of eight or ten hands, to pump the water out, and that in the course of six weeks or two months the mine will be in a condition to employ a full force and set the mills to running as formerly. Mr. Brumagim, the manager of the Grant, will start the quartz mill at Bear Valley as soon as it can be repaired. The 50-stamp mill at Mariposa, too, will soon commence running with half the present number of stamps.

A Hunter's Valley letter to the Stockton *Independent* says the Princeton mine has 400 ft. of water in it; also, that the great dam on the Merced river was washed away during the past winter. The machinery is idle and rusted. . . . La Victoire copper mine in this valley, which was considered enormously rich a couple of years since, has of late been thought to have "petered out." It is owned principally by Messrs. Pioche & Gagliardo, of San Francisco, and may yet prove as rich as it formerly promised. On visiting the place yesterday we found the smelting works in operation.

The Potts mine is about a mile from the La Victoire, and is undoubtedly one of the richest quartz claims in the State. The company now has a shaft down 150 ft., and the rock will average \$40 per ton. They are now preparing to build a new mill of 12 stamps, which will be completed in a few months. La Grange is and will remain dead until the dam on the Tuolumne is rebuilt. A Mr. Thurston is working the only claim near the town that can be supplied with water. He had the means to bring in a ditch of his own. He is doing well.

## Nevada County.

From the *Transcript* of April 25th: On the Skyhigh claim, Deer Creek, the tunnel is in 150 ft., and they have just commenced drifting. In blasting in the tunnel five car loads of gravel were thrown out, which was prospected and yielded one and a half ozs. of gold worth \$17.75 per oz. The company will clean up in a few days.

Same of 27th: Oshorn & Co., at Scott's Flat, after a run of eight days, cleaned up \$400 last week. There are more mines being worked at Scott's Flat than for many years.

The French Co. and Black Bros., owning gravel claims at French Corral, have arranged to run a bedrock tunnel from a ravine near the South Yuba river, for the purpose of opening the claims at Kate Hays' Flat.

Same of 30th: Rich gravel was struck in the gravel claims of Evans & Co., in Birchville Dist. The bed of it is 200 ft. wide. It is estimated that they will take out \$20,000 the next run.

The Granite Tunnel Co., Liberty Hill, Birchville Dist., has commenced washing again.

The miners at Rocky Bar, near Washington, were getting out excellent pay until yesterday, when they were compelled to stop on account of the rise of the Yuba river from the melting of snow. Root, Fish & Co., after one week's work with five men, cleaned up about \$800. Parties are engaged in sinking for the old river bed about Washington, and at a place called Kino Bar very flattering prospects have been found. At Canal Bar, there is every prospect that a number of companies will reach the channel this summer. The river at this point is quite high, and it is probable the miners will not be able to resume work for three or four weeks.

From same of May 1st: Several companies are engaged in washing at Hunt's Hill. The prospects are said to be flattering. The Eastern Co's mill is running, and the Goug-eye will start up in a day or two. The latter company has been engaged in washing off the surface gravel during the winter, and has uncovered a large quantity of rich looking cement, which will give the mill plenty of work.

From the *Gazette* of April 27th: We learn that the claims of Johnson & Co., near Blue Tent, have lately been sold to Bond and others for \$9,000. The claims of Cuddeback and others, near by, have also been sold.

From the Grass Valley *National* of April 22d: This morning, the Lone Jack mine, No. 2, otherwise known as the Homeward Bound, situated about a mile and a half from Grass Valley, was sold to David Hunter and others for a large sum. The purchasers will proceed immediately to erect additional machinery.

Same of 24th: The Ophir is now pumped out, and a force of 24 men engaged in getting out rock. The past winter has been a heavy one, especially the Ophir, as they have had to contend with so much water.

Sixty-three tons of rock from the Shamrock ledge, south of the Forest Spring, yielded about \$2,000. In the 18 months, during which this claim has been worked, \$20,000 has been realized.

From the Grass Valley *Union* of April 26th: The incline on the Wisconsin is now down 250 ft., with a vein averaging one foot, and increasing. The quartz shows abundance of free gold, as well as sulphurets. It is estimated as worth \$100 per ton.

We yesterday saw very rich quartz from a new location, the Victory ledge, which is between Massachusetts Hill and the North Star Co's mine. The rock was taken out at water level, about 30 ft. from the surface, where a well defined 2-foot vein is exposed.

EXCELSIOR.—From the *Gazette* of May 1st: P. E. Jeffries and Ed. Fowler arrived in town yesterday from Meadow Lake. Times are quite dull in the district, but an improvement is anticipated as soon as the snow disappears. The Winton mill is the only one running at present. The Grant, Montreal, Golden Rule and Reduction mills will probably all be running by the middle of this month. At the present time the snow is about 14 feet deep, but has been melting off very rapidly in the past few days—sinking four or five inches a day. There are now about 400 inhabitants in Meadow Lake and vicinity.

## Plumas County.

From the *National* of April 27th: Davis, Bradley & Co., in the Shing claims, have been making from \$7 to \$16 per day for the past four months. Turner & Sons are making \$8 per day to the land. White & Co., from Gibsonville, have purchased the hydraulic claims of J. C. Gentry & Co. for \$2,500 cash. These claims pay largely.

From the Quincy *Union* of April 20th: The owners of the Blue Nose mining claims, in the mountain between Nelson and Hopkins' creek, have, after several years' work in prospecting, struck good pay in their diggings. . . . Williams & Radley have struck good diggings at the head of Rattlesnake Ravine, a short distance from Betsyburgh, and are getting as high as \$1 to the pan. . . . At the last clean up of the Crescent Mills, the company took out \$4,000, the result of one week's run of the mill. . . . Several of the new claims recently located on Dutch Hill are paying an ounce per day to the hand.

## Placer County.

From the *Stars and Stripes* of April 24th: The late strike in the Green Emigrant claim, of which we have made previous mention, has developed into an affair of fabulous richness. It exceeds anything we have ever gazed at in the quartz line. The pay streak has been followed until it is now about eight feet wide and the rock, which closely resembles red cement, will yield from \$100 to \$200 to the pan, of free gold. A few handfuls were washed on a shovel, last Monday, which realized about \$150. About \$3,000 have been panned out within the past few days. Lowry & McCarty, who have a contract which allows them the use of the ground until December, with the privilege of purchasing 800 ft. at \$15 per ft., have been offered \$50,000 for their contract.

From the Placer *Herald* of April 27th: The Golden Rule claim, near Horse Shoe Bar, have their 20-stamp mill nearly completed, and will soon be ready for crushing their rock.

A letter from Forest Hill to the Dutch Flat *Enquirer*, says there are 10 cement mills at work within a circle of three miles radius, of which that place is the center.

## Shasta County.

From the *Courier* of April 27th: The Mammoth mill is to be removed to the Harrison lode at Quartz Hill.

Tiffin's prospecting party of six or eight men will start out next week for the Upper Pit river.

Accounts from the South Fork mines are most encouraging. A large quantity of ore has been taken from the Chicago mine, and is ready for shipment to San Francisco. Work has been commenced on one of the Crystal extensions, and fine prospects obtained. The shaft on the Original Crystal is down 65 ft., and the lode at that depth is well defined and contains very rich silver prospects. Work on the Pacific is going on and the lode looks well, although rather narrow. Some very rich silver ore is being taken from this claim at present. . . . Speculation in claims and feet is not so lively as it has been, but more actual work is being done on the claims at present than at any time since their discovery.

## Sierra County.

From the Downville *Messenger* of April 27th: On the 19th, Mr. Peter Verineersch, who is mining on Goodyear's creek, near Oak ranch, in five hour's pining, picked up from the bed-rock a trifle over \$50. On the 22d, in about the same time, he got about \$25, and thinks by scraping up the fine gold he can get an ounce or two more.

Letter to same from St. Louis: The hydraulic miners are getting ready for operations as fast as possible, as the American Ditch is now bringing in 400 inches of water, and is increasing rapidly.

We noticed at the Downville Foundry, a few days since, a set of pumping and hoisting machinery, which has been got up to order for the Independence mine.

## San Bernardino County.

From the *Guardian* of April 20th: Messrs. Farcot, Moore, Garvey, and Lawler left this week for Holcomb Valley. Mr. Farcot takes with him a powerful steam pump. It is his intention to sink in the valley, collect the water in the reservoirs, raise it to the surface, and distribute it over the mining ground. Mr. Moore goes up to direct operations on the "Green," a gold bearing quartz ledge. There is a large mill on the premises, and a quantity of ore on hand for milling. The men have been engaged all winter in sinking on this ledge, and it is now down 185 ft. It is intended to fully test the rock with arastras. Mr. Garvey has some valuable quartz claims, and takes men up with him to prospect and develop them; He has an excellent mill upon one of them.

The interest in the Temascal tin mines is beginning to revive. The cloud on the title has been dissipated, by the dismissal of the case by the U. S. Supreme Court. Shares are changing hands. Several San Francisco parties are talking of purchasing and commencing operations.

## Tuolumne County.

From the Columbia *Citizen* of April 27th: Kane's claim has done well so far this year. . . . Reiley & Co's still promises well. . . . Coyle & Co's is paying exceedingly well. . . . Byrne, Herrin & Co's paid \$100 per share at the last clean-up, after a run of a few days. . . . McInroe & Co's is a good one. . . . So also Capt. Griffin & Co's. . . . The Cascade claim has been bought by Mr. Hanrahan, after a clean-up of 50 ozs. of gold. . . . Ford & Co's will pay well above wages. . . . Haynes & Co's, the Shilling claim, Boyentou's, and the Podeta give good indications for the season. The prospects for a good mining season are favorable.

## Yuba County.

From the North *Californian* of April 25th: The Rattlesnake Mining Co., at Brown's Valley, will start their mill this week. The Donnehroge mill will be in operation soon. The Pennsylvania and Jefferson mines are crushing day and night on rich rock.

Same of 27th: Messrs. Ward & Robery will complete a mill on the Bateman ledge at Dobbin's Ranch within two months.

Same of 29th, The Blue Gravel Mining Co. at Smartsville, last week, cleaned up \$60,000. This is the largest they have ever made. Three bedrock tunnels are now being run to open the Old River claim at other points.

## ARIZONA.

The Idaho *World* publishes a letter from J. A. Luckett, just returned from Arizona. He says: There are thousands of rich placer diggings throughout the Territory, but they are on the lands where water is very scarce. I think, however, when the country is rid of the Indians there will be machinery brought to bear on the ground that will give employment to thousands of men. Another great drawback to the country is the laws that were adopted allowing men to hold thousands of feet in quartz ledges, merely by marking off and recording, thus keeping capital out of the country; but their time will soon be out, and the day is not far distant when Arizona will be ahead of all the mining countries on the Pacific slope.

The *Miner* of April 8th says: Early last month 50 Apaches made an attack upon the



persons in charge of the buildings at the Mowry mine. Ned Marcy was instantly killed; R. M. Doss wounded; Hon. Oscar Buckalew, of the last Legislature, shot in the knee, and refusing amputation, will probably die. Everything would have been destroyed but for the timely arrival of Lieut. Hutton and party.

A large party of miners left Leavenworth for Arizona on the 18th inst., under the guidance of an old mountaineer, who professes to have discovered extraordinary rich mines, but to have been driven away by Indians.

From the San Bernardino *Guardian* of April 27th: A gentleman just from Prescott, gives us these items: For a month past, business at Prescott has been extremely dull. The Umpqua mill will commence running the first of next month. The Bully Bheno Co. are doing nothing at present. Capt. Wolsey is operating his stamps with considerable success. The large new 20-stamp mill at Wickburg, got to running week before last, and is at present turning out \$2,000 a day. The ore still continues good, and is entirely free from sulphates. This mill is owned by New Yorkers, and is the largest in the Territory.

#### BRITISH COLUMBIA.

From the *Oregonian*, April 3d: Reports from Forty-nine Creek are good. Old California and Cariboo miners say they believe it will be the best camp they have seen for a poor man since they left California; there are about 100 men there now; more going every day; the mines are easily worked, and pay from the surface down; prospects so far will pay from \$6 to \$18 per day. It is 90 miles from Colville.

#### IDAHO.

From the *Avalanche* of April 13th: Mr. Gove visited the Oro Fino mine during the week, and found the works in a better state of preservation than could have been anticipated.

The Hays & Ray lower tunnel is now in 600 ft., and the ledge is improving in quality. At the rate of progress so far, the tunnel will reach the Poorman works by the 1st of June. It has been decided to sink a shaft at the south line and at the bottom of the Poorman works to connect with the tunnel.

The shaft on the New York ledge is down 50 ft. The ore is carefully assorted in the mine. The Webfoot mill will be started as soon as the roads are in a passable condition. In a visit the other day to the first south extension of the Silver Cord, we panned out the decomposed and crumbled quartz, and found almost every particle to show free gold and sulphurets of silver.

The Rising Star mine, in Flint Dist., is yielding richer ore than ever, we are informed. We saw a small chunk from there which is more than half silver in weight. An assay recently made of this ore shows it to be worth \$5,999 per ton. As we are told, the quantity of this rich stuff is increasing. The Flint mills will both start up next week on Rising Star ore. Work on the Forrest has been continued through the winter. Two more companies will erect a 10-stamp mill in Flint this summer, with one of Knox's crushers.

From the Lewiston *Journal* of April 12th: All reports from the Lemhi mines confirm the belief that the area of that mining section is quite as large if not larger than the Blackfoot region, but no reports make the mines as rich. There is this to encourage miners in going there, namely, most of the country west and south of the present camps of Lemhi, is comparatively unprospected. The distance from Lewiston to the mouth of the Lemhi is about 260 miles. It cannot be traveled with animals before June.

The people of Warren's are subscribing toward the purchase of a quartz mill for testing the ledges in that camp.

The Walla Walla *Statesman* has a letter from Spokane Bridge, which says: Mr. Tim Lee has received news from Mr. John Fisher, of Kootenai notoriety, of a grand camp being struck on Thompson's river, a tributary of the Pen d' Oreille.

We learn from a private letter from Missoula City that about 100 miners were waiting at the mouth of the Joco for the snow to settle so that they could go to the new diggings. Thompson river is a tributary to the Pen d' Oreille. The mines are supposed to be south of the 49th parallel and in U. S. territory.

From the Idaho City *World* of April 13th: From friends residing in Pioneer City, Centerville, Placerville, Granite Creek, and other points in the Basin, we learn that active preparations are generally being made for the opening of the mining season, and upon a larger average scale than in any previous spring.

A miner's meeting in Dist. No. 4, Moore's Creek, voted April 6th, that all claims be laid over until the general price is 10 cents

per inch for 24 hours and dump free of cost, and all such claims shall be noticed on the first of May, and that creek claims be laid over from the first of December to the first of July.

From the *Statesman* of 13th: The road is alive with Chinamen. At Umatilla the seats in the stages are all engaged for 20 weeks ahead.

#### MONTANA.

From the *Post* of April 13th: "Neal" writes from Atlantic City: From claim number three above lower discovery, which is just being opened, I saw a prospect from one pan amounting to \$1.66.

"M." writes from Jefferson: The shaft upon No. 3, east, on the Gregory, is now 140 ft. deep, and the crevice at that depth is 16 ft. wide, containing throughout that entire width ore of exceeding richness.

"Voice," from Beaver Town: On the Casket lode they have a tunnel in 80 ft. and a 5-ft. crevice of richer rock than ever.

Alder Gulch will be alive with workers before the end of the week.

Turnley's Little Giant mill cleaned up on last Tuesday 183 ounces, being the proceeds of the last week's run from Whitlatch Union rock.

Letter from Argenta: I witnessed the last cupellation of 11,000 lbs. of rich lead from 1½ tons of Legal Tender ore. It yielded of 200 lbs. of pure silver. These works are a complete success, and this is due to the persevering energy of Mr. Deidesheimer, the Superintendent.

#### NEVADA.

**Black Rock.** From correspondence of the Susanville *Sage Brush*: In Virginia City can be seen a piece of Snow Storm ore, which has been treated in a smith's fire, and there is but little doubt but that one-fourth of its weight is silver and gold. Now, if it is silver alone, its value must be some \$9,000 per ton, and there certainly is more than twenty per cent. of gold.

**Esmeralda.** From the *Union* of April 20th: The lately discovered district of Washington, near Pine Grove, on Walker river, is attracting the attention of capitalists. A town has been laid out and christened Washington. There is plenty of wood and water. The most encouraging feature is, that the mine owners are not on the sell.

From the *Enterprise* of April 25th: A personal friend of ours, who is a practical miner, just in from Walker river, does not think much of Wilson's Dist., the veins being narrow, but speak well of Washington Dist.

From the *Trespass* of April 24th: Mr. Wilson, from Pine Grove, gives us these items: The tunnel upon the Wilson claim is in 400 ft., and is expected every hour to strike the vein. So far, 240 tons of ore have been worked, the first 67 tons yielding \$40 per ton. Twelve tons from the Wheeler worked \$54 per ton. The prospects of the Imperial are flattering. A large vein of good ore was cut last week, but cannot be worked at present, on account of water. The Midas adjoins the Wilson, and the tunnel is a joint affair between the two. Some ore from the Grant recently paid \$10 per ton. Miners are plenty, and the supply exceeds the demand at present.

#### Humboldt.

From the *Register* of April 20th: The St. John mine, in Sacramento Dist., is to be developed by parties in St. Louis. It is a vein of good size, and crops out boldly. It is situated within eight miles of the line of the Pacific Railroad.

Mr. Nason, of the Oreana Furnaces, furnishes return teams to the railroad terminus at Cisco, with his crude bullion as back freight at \$40 per ton. Nine thousand dollars of refined and ten tons of crude bullion has been shipped recently from these furnaces.

At Unionville, Fall's mill is kept constantly at work on ores from the surrounding mountains.

Arrangements are being made by the Seminole Co. to resume work at an early day. The Superintendent, Davids, is now in New York.

#### Reese River.

From the *Reveille* of April 20th: The first lot of ore from the Rigby mill at San Antonio was brought into town to-day. It amounted to 4,337 ounces. The bullion is the product of ore from ledges in Potomac hill.

Roasting furnaces are being added to the small mill of the Constitution Co. at Hot creek. Considerable work has been done on the Indian Jim.

From same of 23d: In Reveille Dist., the Fisherman ledge of the Bullion Co. is looking superbly. The vein is four to five feet wide, of \$500 ore. There is ore enough on the dump now to yield fully \$15,000 worth of bullion, and pieces weighing fifty pounds,

which would work a dollar to the pound, are seen lying around.

The Rutland mill is now working successfully. Wood is abundant at \$2.50 per cord.

Same of 24th: Preparations for work on an extensive scale are being made in the Cortez district. The Cortez Giant of the Mount Tenabo Co. is steadily worked, and exhibits a large body of improved ore.

Same of 25th: We hear flattering accounts of the Silver Chamber mine, on Union hill. At the bottom of the incline, the ledge is said to be five ft. thick. We were shown a sample of the ore, which will yield probably from \$40 to \$60 per ton.

The ledges of the Plymouth Co. on Lander Hill, are to be thoroughly worked. From the Kalesed, three tons of ore has just been reduced at the Parrott mill. An assay of the pulp gave an average of \$244 per ton.

Same of 26th: The Manhattan mill produced, in 11 days, billion of the value of \$25,000. The capacity of the mill at present is only ten stamps.

The Fuller mine, on Lander Hill, is yielding ore, the pulp of which assays from \$700 to \$800 per ton. The Buel North Star is also producing rich ore. The North Star mine of the Manhattan Co. is turning out the richest kind of ore in quantities beyond the capacity of the mill to work. The great Sherman shaft goes on. Fine ore is coming out of the Savage. The Magnolia is preparing to take out rich sulphurets ore with the new hoisting works. Work progresses on the Diana, Fortuna and Great Eastern.

From the Silver Bend *Reporter* of April 20th: The Silver Bend Co. have suspended work on their mine. Various reasons are assigned by outsiders, and none by the company. A very probable one is, that the company have already several months' mill supply of rich ore at their dump, and their mine is so well opened that they can keep up a constant supply, and they may as well suspend until their mill (now on the road) is received.

Mr. Arthur Doyle, on the 9th inst., discovered a monster ledge in Manhattan Dist., 18 miles from Belmont. It is 30 to 40 ft. in width, and is traceable for six miles.

A small train of camels and dromedaries are now engaged in conveying provisions to Mill Spring Dist., and returning with ore to Austin for reduction.

At Spanish Belt, Philadelphia Dist., the Wide West have sunk a perpendicular shaft about 40 ft. deep. At 15 ft. from the surface it passes through a ledge several feet thick, in which it discloses a body of ore extending nearly across the eastern side of the shaft, and three feet thick, as rich as the best found in the Highbridge ledge. The Westport Co. struck the vein 65 ft. in; but the ore was not so rich as that on the surface. It is believed that greater depth will develop a good mine.

On the 17th inst., the Combination Co. commenced a perpendicular shaft on the Highbridge, which is intended to be carried to the depth of 700 ft. It will be 16 ft. 8 in. by 5 ft. 8 in., divided into three compartments each 5 ft. square. It is intended to be the finest piece of work of the kind in Nevada (the Comstock lode excepted). The machinery for a first-class mill is on the way, comprising one engine of 100-horse power and one of 80-horse. It will have 50 stamps.

#### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of April 25th: The Granite mill is crushing ore from the Savage mine.

Same of 26th: The Summit mill, 20 stamps, is crushing ore from the Chollar-Potosi.

During the week past, from the office of Wells, Fargo & Co., in this city, there were shipped 4,267 lbs. of assayed bullion, valued at \$130,291.99; from their office in Gold Hill, 4,183 lbs., valued at \$115,123.46.

Same of 27th: The Hoosier State mill will probably be at work in a fortnight. It will contain 18 stamps, 24 Knox pans, and four of Greely's patent pans, and will be capable of reducing 40 tons of ore per day.

Work is still being vigorously prosecuted at the new Hale & Norcross shaft. Just at present the rock is very hard and every foot taken out must be blasted.... The Chollar-Potosi is yielding immensely in excellent ores.

From the *Trespass* of April 23d: The engine at the Petaluma mill was started for the first time last evening, and worked well. It will reduce ore from the Kentuck mine.

The owners of the Trench ground, in Gold Hill, are working their claims through

an incline, double track, and hoist the ore with a windlass, keeping their mill in Silver City in active operation. The ore pays \$25 per ton.

Same of 26th: A very rich auriferous lode was cut last week in Palmyra Dist., a few miles from Como. In 1862, the Van De Water ledge was located at this point. Subsequently a tunnel of 434 ft. was run, but no ledge found; a shaft was sunk 60 ft. with no better result, and the work was abandoned. Recently the tunnel was continued into the hill by a party, who relocated the claim. After running some 25 ft., they struck a 9-ft. ledge of ore, which assays \$56 to the ton, of which \$54 is gold. Free gold is plainly visible in the rock.

From the Gold Hill *News* of April 23d: At the Crown Point, the company are taking out a little over 100 tons of pay ore per day. The Kentuck is taking out considerable ore of good quality: some of it is in fact uncommonly rich. The Yellow Jacket Co. are taking out a large amount of excellent ore at the south shaft. Most of this ore now being taken out in Gold Hill, is from the surface or above the upper level. It yields from \$25 to \$30 per ton on an average.

In Gold Cañon, two men can tend tailing sluices enough to save a ton and a half per day, worth from \$18 to \$22 per ton. The tailing mills work them for \$10 per ton. There are 75 sets of these sluices between Gold Hill and Nevada.

#### OREGON.

From the Jacksonville *Press*: The excitement with regard to the new diggings on Jump-Off-Joe continues unabated, and persons returning from there bring with them evidences of their richness in the shape of the genuine ore.

From the *Sentinel*: Crandall & Co., owners of the copper ledge on Fall creek, are now building a furnace for smelting purposes. The ore contains copper, gold and silver.

The *Avalanche* has been shown late letters from the Eagle creek copper mines, which speak enthusiastically of the large size and wonderful richness of the veins. Some of the samples are full of native copper.

The *Times* has seen a sample of very fine bituminous coal from Yaquina Bay. Beds of it have been found of three feet in thickness.

**A SUGGESTION.**—In the *Bulletin's* review of the annual report of the Nevada State Mineralogist we find the following, which we quote entire:

We wish, if it were possible, that an Annual Report of Mining might be published by the Geological Survey of California, which should aim to give, in a compact and trustworthy form, matters of immediate interest, the postponement of which to the day when the volume on *Technical Geology* may appear, is a loss of no small information to the busy, active miner, who has a right to ask that he may be supplied with much new matter of current and immediate interest. The full details of many such things can, we know, be properly given only in the most stately and dignified form of a quarto volume; but we presume there are ample materials at hand for the preparation and publication of such an Annual Review of the Progress of Mining as would be of great public utility. The Geological Survey feels itself limited at present to working on its larger mission within the appropriations which are so hard to secure each year; but we are convinced that if the Legislature would make a special appropriation for the preparation of such an annual as we have suggested, to be published by the State Printer, it would do much good to the mining interest, and aid to popularize the Survey. None but those who know the difficulties, prejudices and discouragements the Survey has encountered, and who are familiar with the wide scope of work it has laid out in a new and extensive field, can appreciate how much it has done in the accumulation of original scientific material as well as in the domain of practical information. It would, no doubt, be glad to do what we have suggested in addition, if it had the authority and the means.

Our sister State has set us a good example in this respect, and we hope on every account she will follow it up each year, and that we may not, from any cause, fail to copy and improve on it. The subject is suggestive, but we forbear, remembering that we are writing a book notice and not a review.

**FOR GRAPE GROWERS.**—The Visalia *Delta* of April 17th, says: We will give \$25 to any person in the State, who will raise a greater weight of grapes from one acre the present season, than are raised from the same space in the Tulare Valley. The proof shall be furnished and the award made at the California State Fair for 1867."



## Mining and Scientific Press.

W. B. EWER.....SENIOR EDITOR.

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## Canvassing Agents.

Our Friends can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.

**Mr. E. W. Felton**, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1865.

**Mr. Geo. P. Pitts** is a duly authorized agent for the Mining and Scientific Press at Portland, Dec. 23, 1865.

**Mr. C. Steele** will act as agent for the Mining and Scientific Press from this date, April 27, 1867.

**Mr. Chas. W. Marlette** is agent for this paper in In Colusa county and vicinity, April 27, 1867.

## San Francisco:

Saturday Morning, May 4, 1867.

## Notices to Correspondents.

ENQUIRER requests our views as to the best mode of preserving gold-fish. Our duties rather draw our attention to matters relating to fishing for gold, in place of piscatorial preservation. In common with many, however, we have felt and still feel some pleasure in observing the gambols of these diminutive dwellers of the aquatic element. Our own experience tends to show that a change of water oftener than twice a week is not desirable; handling is very undesirable; when such is required, a coarse cloth net should be employed. The temperature of the room should never be allowed to fall below 50° or 60° Fah.—in fact, gold-fish delight in a comparatively warm water, say from 70° to 80°, provided the other conditions required for their healthy growth are present. Gold-fish do not require much food; as, however, the water (excepting after heavy rains) which is now supplied to San Francisco, is almost void of animal, vegetable and mineral impurities, it is quite evident that the fish must deteriorate unless supplied with food of some sort—crumbs of bread, sparingly, and occasionally insects, or small worms, may be from time to time given them. The disease you allude to, which causes the fish to turn black and die, most probably arises from neglecting to supply these pleasing little fresh water denizens with one or the other of the requisites of life above alluded to. As a general rule, the globes ordinarily used to hold gold-fish are too small. In a good sized aquarium, furnished with aquatic plants and some of the common varieties of univalves, found in California fresh water, would doubtless render a change of water not necessary oftener than once in a fortnight. In any case, it must be seen to that a sufficiency of aliment to maintain life is furnished.

T. N., Austin.—We do not take the gloomy view you do respecting our mining prospects, whether as respects the current year or the more distant future. On the contrary, we conceive that we are on the verge of a more rational management; also, that more sober views will in future be entertained respecting not only the profits which may be anticipated, but also the losses which may be sustained in mining enterprises. In the commencement of the mining furore, the former passed all reasonable bounds, and caused "wild-cat" to be profusely scattered amongst credulous investors. A depressed feeling now almost as unreasonably prevails. Things will soon probably shape into their proper places, and a profitable and brilliant future looms at no very distant period.

COMMUNICATIONS RECEIVED.—"Copper Smelting at Campo Seco," by W. B. West; also, "Mining in Boise Basin," by John Hemsley. We have, at this time, quite a number of favors on hand from various correspondents, which will find a place in our columns as fast as we can make room for them.

THE FINEST BANK-NOTE ENGRAVING in the world is done in New York. The American Bank-Note Company supplies half the world with paper money to order.

## Important Improvement in Glass Making.

## AN IMPROVED GLASS POT.

One of the most difficult and important operations connected with the production of glass ware, is the making and setting of the melting pots. All who are acquainted with glass working, are aware that the pots in which the glass is made from its crude materials, and from which it is taken in its melted state to be fashioned into all the curious shapes in which it finds its way into the various avenues of commerce, are arranged in a circle around the inside circumference of a large circular furnace, placed inside of a truncated cone, open at the top, and from sixty to seventy feet high. The heat in this furnace is kept up at a very high point, in order to retain the melted glass in a constant state of fluidity. Muspratt fixes the heat of a glass furnace at 20,000° Fah.

In the manufacture of coarse glass these pots are open at the top, so that the heat may be applied directly to the material; but for the finer varieties of glass, the pots must be closed from the direct action of the flames, in order to keep the material free from the dust and other impurities produced by the combustion of the coal. In such pots the heat for melting and keeping the material in that state, must be passed through the walls of the pots; hence a greater intensity is required. This is, of course, attended with an increased expense of fuel and time, over that required for the making of common or green glass.

It is a little singular that in all the history and activity of modern invention, no improvement has been introduced into the form and construction of melting pots for making glass. The pots are the same to-day, so far as the economy of glass making is concerned, as those which were described some hundreds of years ago. They are made in two forms, one an open pot as above described, and the other hooded or covered over, to keep the impurities of the furnace from being mixed with the glass. These last, which are exclusively used in all flint or fine glass furnaces, have only a working hole open to the external air, through which they are filled with the charges of raw material, and by means of which the workman has access to the melted material when blowing. In the use of the covered pots, as now constructed, the heat and products of combustion pass out of the furnace through bye-holes, placed on each side of the pot. From these bye-holes, flues lead to the stack, by which the draught of the furnace is established and the smoke carried away. The "bath" or material is melted, as already stated, by forcing the heat through the walls of the pot, at great cost of fuel and time much in excess of that required to make common green glass in open pots. When open pots are used, the smoke and gases pass out of the furnace through working holes, and is taken away by means of an outer cone.

It seems to have been reserved for a California manufacturer to make the first material improvement in glass pots on record. Mr. Carlton Newman, of the firm of Newman & Brannan, proprietors of the San Francisco Glass Works, at the foot of Third street, in this city, has effectually broken the ice in this direction, and devised an improvement which, though simple in its character, bids fair to accomplish a most important work of economy in glass manufacture, whereby the time for bringing the metal for the manufacture of fine glass into a condition for being worked, is reduced from thirty-six to twenty hours. The saving of time and fuel by this improvement will be more fully understood when it is recollected that there are generally ten pots in each furnace, each of which have to be filled with new material as often as every other day.

The device by which Mr. Newman has

accomplished this, is simply an ingenious application of the well known principle of adding fresh oxygen to the liberated gases and smoke, from burning coal, before they pass into the flue for escape into the outer air, whereby they are more thoroughly consumed. The incidental advantages derived from this, are of far more importance to the glass manufacturer than the mere saving of fuel and time, as will hereafter be shown.

The gases and smoke which, in the present mode of constructing closed pots and furnaces for fine glass working are made to pass over the pots into the flues, are by this invention caused to pass into the pot during the process of melting, through an aperture in the top, at which point they meet a current of fresh air, by which they are ignited and kept burning, like a huge gas jet, in such a manner that a large volume of flame is made to play directly over the material to be melted (the working aperture, in the meantime, being closed), while the products of this gaseous combustion are conveyed from the interior of the pot through two conveniently devised apertures, opening from the inside and leading by proper flues to the main stack. When the glass is ready for working, all these temporary apertures are closed up, and the smoke and flames from the furnace pass up the stack through bye-holes, in the usual manner. The apertures are also prevented, by being so closed, from admitting from the outside any draft through the working holes, by which the interior of the furnace might be chilled. The extra cost of constructing a pot after Mr. Newman's invention, is a mere trifle, not exceeding one dollar.

The peculiarities of Mr. Newman's invention, and the difference between his mode of constructing the pots and those now in use, will be readily seen after reading the above, by any person at all acquainted with the construction of glass furnaces. It will, moreover, be readily apparent to all such, that one of the advantages of Mr. Newman's invention is to render the melting in a covered pot as effective and rapid as in an open one.

One of the incidental advantages derived from this circumstance, is the fact that the manufacturer, by the use of these pots, will be able to economically melt and work green glass and flint glass, in different pots, in the same furnace, without interfering the one with the other; which cannot be economically done by any pots or furnace-construction now in use. One important advantage of this will be readily recognized by every glass manufacturer, in which the necessity of different furnaces, suited for different kinds of work, is done away with, as well as the thriftless practice of exchanging orders—the flint glass manufacturer sending his orders for green glass to the green glass manufacturer, and vice versa.

In addition to the advantages already enumerated, there are yet three other important economical considerations derivable from this important invention, in furnaces where the pots are used exclusively for making green glass.

**First.**—By means of the great heat which can be maintained in these pots, the operator is enabled to burn off the "sandever" or salts, which appear to consist of an excess or impurity of the fluxing materials employed in the process of melting the "batch." Instead of having to remove this matter by lading or running it off by filling the pot up to its very brim (in either case wasting a large amount of glass at every melting), it is all removed by vaporization by an increase of heat and draft through the pot, that can not be obtained in the green-glass furnace. The removal is also much more complete than can possibly be effected in the ordinary manner. The well known injurious effect upon the "bench" or hearth of the furnace by the "running over" process, is by the use of this pot entirely avoided.

**Second.**—By using this pot in green glass manufacture, Mr. Newman has found it pos-

sible to use the common sulphate of soda waste of the acid factories, instead of the "soda ash" of commerce. The first is a useless product at present, while the latter costs in this market 4½ cents per pound, and constitutes a large item in the cost of glass making. This sulphate of soda is subjected to a partial desulphurizing process, by being roasted with pulverized charcoal, in a simply constructed reverberatory oven, which is attended with but little cost or trouble. Sulphate of soda is used altogether in Europe instead of soda ash (carbonate of soda) for the manufacture of green glass, although we believe that but one or two American glass manufacturers have yet been able to make use of it. Why it is so, we are unable to say, although it may possibly be from the excess of acid left in it by the American acid manufacturers. The successful employment of this cheap material in Europe should induce our own manufacturers to inquire more fully into the matter, to the end that they might also profit by the same advantage. The small excess of acid that may be left by our manufacturers could easily be removed if that should be any hindrance to its use.

**Third.**—But by far the most important economical consideration is the saving of furnace destruction, and the improvement effected in the quality of the green glassware produced by the use of this pot. All glass-blowers are aware of the destructive action of the "tears" or "slacks" which drop from the crown of the green glass furnace. They are produced by the alkaline volatilization from the pots, which, condensing on the crown of the furnace, unite with the silica and alumina of the bricks, and form a sort of glass, which melts and drops off until both the crown and hence are completely eaten away and the furnace destroyed. This is felt in every part of the furnace, and is greatly increased by the overflow of the "sandever," already noticed. By the exclusive use of these pots, all this source of destruction and annoyance is entirely removed, as no alkaline vapors whatever can enter the furnace. Hence, a green glass furnace, with the improved pots, can be made to stand five or six years, or as long as a flint-glass furnace, instead of being so injured as to require rebuilding every year, as is now the case.\* And yet further—these tears or slacks, as is well known, in furnaces of ordinary construction are constantly dropping into the open pots, from which they have to be picked out to prevent their becoming mixed with the glass; yet with all possible care to prevent this, a large number of bottles to each blower are daily destroyed by their pestilent presence. They form a foreign substance, which will not mix with the glass, but are sure to cause its fracture, either during the annealing process or upon the slightest carelessness of handling afterwards.

Much more might be written with regard to the value of this invention; but we have already exceeded the space we had intended, and must close by merely claiming this as one of the most important inventions among the great number of really valuable contributions which California has made in the direction of economical industry. These pots have been in constant use at the San Francisco Glass Works, in this city, for the past six months, and are found to accomplish all and more than is claimed for them. A patent has been granted for the invention by the United States Government, and steps are being taken to secure patents in the principal countries of Europe.

\*Green glass furnaces are rebuilt every year in most or all American glass manufacturing, although we understand they are made to last an average of about three years in Europe. The greater durability of European furnaces is due to the improved character of the materials of which they are built.

**GOLD AND SILVER TABLES.**—We have received from L. A. Garnett, Esq., manager of the San Francisco Assaying and Refining works, a copy of the above-named work. It contains, besides the tables showing the value of gold and silver per oz., at different degrees of fineness, rules for the purchase and sale of unparted gold bars; foreign gold and silver coins and their value; explanation of English assay returns; Mexican, French, and Chinese weights; relative value of avoirdupois and troy weights; comparative value of gold and legal tender notes; and other memoranda. The book is invaluable for bankers and gold dust buyers.

**ALPINE SILVER.**—A telegram from Mount, April 30th, is as follows: Seven thousand pounds Tarshish ore, worked at Ophir Mill, Washoe, turned out a brick worth \$1,050.



### Metallurgical Works--Important Enterprise.

We understand that T. H. Selby & Co., the enterprising proprietors of the lead-pipe and shot works on First street, are making preparations for the early establishment, in this city, of works for smelting lead ores. They have already collected the chief portion of the materials for putting up the works, and will commence their erection as soon as a proper location can be secured. They have recently established an agency at the head of navigation on the Colorado river for the purchase of lead ores and whatever pig lead may be produced from any smelting works which may be erected at the mines. Ores and metals will be purchased outright, or advances will be made on them, at the option of the sellers. The miners of that section, and indeed of every other portion of the Pacific coast, will thus be able to command the cash for their lead ores as soon as they can be delivered at any of the company's depots.

It was the expectation of this company when they started their lead works in this city, that the facility which would thereby be offered for an immediate market for lead ores, would be such an inducement as would call into existence smelting works for the production of the raw material in quantity sufficient for the wants of the manufactory; but the result has been far otherwise. Although the company has turned out some 1,000 tons of manufactured articles, they have been compelled to rely upon the Eastern markets for all but a mere moiety of their pig lead. The only successful lead smelting works hitherto started on this coast are those of the Trinity and Sacramento Silver Mining Company, in Humboldt county, Nevada, who are working an argentiferous lead ore. A full description of these works was given in our issue of February 23d; but the cost of transportation from that locality will preclude any very considerable delivery of lead from thence in this city until the Pacific Railroad shall be in operation as far as that point.

It is gratifying, however, to be able to state that our pioneer lead manufactory has proved so complete a success as to induce its enterprising proprietors, as already stated, to the still further investment of capital in that direction, in order to secure for their works a supply of lead from our native ores. The fact has now been fully established that valuable lead mines exist on this coast, and that they can be profitably worked, and nothing but capital and enterprise is needed to add their riches also to the already valuable and varied mineral productions of this coast. It is fortunate that so important an undertaking is to fall into the hands of gentlemen of such intelligence and means as will preclude any possibility of failure of the enterprise—not that lead smelting is difficult or in any way an intricate operation, for it is almost as simple as baking bread; but a Digger Indian makes a poor hand at that, and so will any person of inexperience fail in producing lead, be the ore ever so rich.

The great fault of Californians is their desire to experiment and improve; and, most unfortunately, those who enter upon such operations are generally those who lack the means to make more than one experiment, which generally winds up their business, and too often acts as an effectual discouragement against any further effort in that direction by other parties. We have reason for believing that the gentlemen who have this matter in hand will undertake no experiment, but will put up furnaces upon well established principles, such as have long been in successful operation in Germany and England, and employ in their construction and operation parties every way competent to carry out whatever they undertake. Appearances indicate that but a few years will elapse before the entire wants of California, in the way of manu-

factured lead, will be produced within our own territory and from the product of our own mines.

We further learn that it is in contemplation, as fast as circumstances will permit, to increase and vary these works, until they shall be able to treat every kind of ore, such as lead, copper, gold, silver, zinc, etc., until they have in operation as complete and varied a metallurgical establishment as the progressive requirements of our most varied mineral resources shall call for.

**THE GREAT CENTRAL COPPER MINE**, located at Williams' Fork, Arizona, appears to be now in full tide of successful operation. Letters have been received in this city, during the past week, from which we learn that the company's new and large furnace was fired up for the first time on Saturday, April 6th, with the most satisfactory results. "In two hours after turning on the blast the copper was running like water." After the fire was run down and the furnace cooled off, the hearth was found clean—the metal having all run off. The furnace was fired up again on the 9th ult., and was in full blast when the correspondent, whose letter has been submitted to our inspection, left the mine on his way to Prescott. This furnace has proven its capacity to smelt from sixteen to twenty tons of ore each twenty-four hours, producing according to the richness of the ore. It is the intention of the company to ship to this city all ores which assay forty per cent. and over, as the cost of smelting them, taken in connection with the present facilities for transportation, make it more profitable to ship high-grade ores than to smelt them on the ground. Freight is largely saved by smelting at the mine the low-grade ores. The average of the ores which will be smelted will be about twenty-five per cent. The shipping ores will assay from forty to seventy-five per cent.—averaging about fifty-five. The company had, at last dates, over one hundred and fifty tons of good smelting ore on the ground, and some fifteen tons of sixty per cent. ore for shipment. This ore is from the Eliza vein, and the Cornish miners thought they would have out from sixty to one hundred tons additional of shipping ore by the first of May, which would come fully up to the fifty-five per cent., as above. The company own seven veins under their incorporation, a portion of which will be worked for gold and silver. One of the copper veins, the Marion, has exhibited most remarkable developments within the few past weeks. The vein, at last accounts, was fully five feet thick, producing good smelting ore. We hope to hear further accounts from this interesting and important mine in a few weeks.

**PACIFIC LAW MAGAZINE**.—We have received the fourth number of this monthly. It contains, among other matter, No. 2 of what would seem to be a series of valuable articles on the subject of "Congressional legislation upon titles to mining claims, and the right of way over public lands to ditch companies," by Gregory Yale. Not having yet seen No. 1 of the series, we will only say here that we intend to look up the subject carefully, and give space to it in a future issue.

**LOWER CALIFORNIA**.—Professor Gabb and party arrived at San Diego on the 20th of April. An account of the expedition will probably be published soon. It will undoubtedly be an extremely interesting one, inasmuch as the country explored was one but little known, and the party possessed within itself every essential for the production of an elaborate scientific report.

**PACIFIC MUSICAL GAZETTE**.—We have received the first number of this journal, from Kohler, Chase & Co., the publishers. It is a neat monthly of 12 quarto pages letter press, and four pages of music. That such a publication is called for in this city is another gratifying proof of its rapid progress in culture and refinement.

**PURE SOAP**.—We recently visited the factory of Messrs. Lucy & Hynes, on Beale, between Mission and Howard streets, where for the past five years they have been engaged in the manufacture of their "Genuine Pale and Chemical Olive Soap." As one of the best evidences of the merits and public appreciation of the same, they have supplied the Government during the same period, on several different contracts, and on each occasion with no inconsiderable amounts. The specimens of soap examined in this extensive establishment, have every appearance of being entirely pure and free from all foreign substances, such as soapstone, plaster of paris, sal soda, or other impurities which often manifest themselves on exposure to a moist atmosphere in little frosty bubbles on the surface of any inferior or adulterated article.

**HOOKE'S EXCELSIOR PUMPS**.—Capt. V. Cushing sold four of these pumps in one day last week. One of these was to Geo. J. Griffing, for Holcomb Valley, via Los Angeles; one to Joseph Mulhill & Co. for Mexico; one to the California Land Mill and Mining Company, for Meadow Lake, Nevada county, and one for Woodward's Gardens. To the one last mentioned, which will be in a place accessible to every citizen, the inventor invites public attention, as a specimen of these pumps.

**THE FLOWING WELL IN SANTA BARBARA**. We are informed by a gentleman who arrived from Santa Barbara, by steamer, on Thursday last, that the report of a flowing well on the Ojai ranch, is without foundation.

**Brown's Filtering Heater**.—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to Austin A. Wells, Agent.

—USE—  
**EMERY & EATON'S**  
**GREEN SEAL SMOKING TOBACCO.**  
16v14-6m No. 513 Battery street.

**Gold Bars**, of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

**J. W. WINTER, DENTIST.**  
First-class gold fillings for \$3, as good as any dentist can produce in the city. Dr. Winter has practiced Dentistry twenty years—fifteen in this State. For a full upper set of gum teeth, on vulcanite base, from \$20 to \$35. Teeth extracted without pain by local application. 18v14-tr

**THE CELEBRATED**  
**Self Generating Portable**  
**Gas Lamp.**  
This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivalled, burning with undiminished brilliancy in a strong wind.

**Directions for Use.**  
Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will then burn, sending out gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.  
A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.

When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.  
Manufactured solely by JOHN J. HUCKES, original proprietor, Factory, North Beach, San Francisco, and for sale by his agents in every city and town throughout the State. 18v14-3m

**Builders' Insurance Company**—  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 16v14-ppqr

**MAURICE DORE & CO.,**  
Real Estate, Stock and General Auctioneers,  
Office and Salesroom, 327 Montgomery st.  
**H. A. COBB, Auctioneer.**

**Guardian's Sale of Real Estate.**  
**NOTICE IS HEREBY GIVEN, THAT IN PURSUANCE** of the order of the Probate Court of the City and County of San Francisco, in the State of California, made on the 25th day of January, A. D. 1867, in the matter of the guardianship of the person and estate of Bertha Louisa Washburn, a minor, the undersigned, Guardian of the person and estate of said minor, will sell at public auction, to the highest bidder, for cash, in separate parcels, and subject to confirmation by said Probate Court, on SATURDAY, the 26th day of May, A. D. 1867, at 12 o'clock M., at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, in said City and County, all the right, title, interest and estate of said minor in and to each of those lots, pieces or parcels of land situate, lying and being in the said city and county, and described as follows, viz:  
PARCEL No. 1.—Lot on the west side of Stockton street, commencing 93 1/2 feet north of Jackson street; thence north 20 feet 7 1/2 inches, by a depth of 93 1/2 feet.  
PARCEL No. 2.—Lot on the east side of Stockton street, commencing 87 1/2 feet north from N. E. corner of Stockton and Greenwich streets; thence north 50 feet, by a depth of 137 1/2 feet.  
PARCEL No. 3.—Lot on S. W. corner of Sacramento and Gustavus streets, 60 feet front on Sacramento street by 77 1/2 feet deep on Gustavus street.  
Terms and conditions of sale: Cash, to be paid on the day of sale.  
Guardian of the person and estate of said minor,  
San Francisco, May 4th, 1867. 13v14-3w

**GLASGOW**  
**IRON & METAL IMPORTING COMPANY,**  
Nos. 25 and 27 Fremont street, near Market,  
SAN FRANCISCO.  
Bar and Sheet Iron; Boiler Plates and Tubes; Gas and Water Pipes, Gas Fittings, Anvils, Cast Steel, &c. 18v14-2m

**MARTIN L. HAAS,**  
**PEARL SHIRT MARK.**  
**Pearl Shirt Manufactory,**  
Southeast corner Sansome and Halleck sts.,  
15v14-9plm SAN FRANCISCO.

**PACIFIC**  
**Rolling Mill and Forge Co.,**  
SAN FRANCISCO, CAL.

Established for the Manufacture of  
**RAILROAD AND OTHER IRON**  
—AND—  
**Every Variety of Shaftering,**  
Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.  
—ALSO—  
**HAMMERED IRON**  
Of every description and size.  
Orders addressed to **PACIFIC ROLLING MILL AND FORGE CO.**, Post Office, San Francisco, Cal., will receive prompt attention.  
The highest price paid for Scrap Iron. 9v14-3m9p

**A. S. Hallidie & Co.,**  
MANUFACTURERS OF  
**FLAT & ROUND WIRE ROPE,**  
For Mining, Shipping, Ferry,  
AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach.

**NOTICE**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Wire Ropes, which have been in use for a number of years by the leading mines on this Coast, and of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—  
**Round Wire Rope**—Iron or Steel, for Hoisting.  
**Flat Wire Rope**—

**Soft Steel Wire Rope**—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

**Galvanized or Ungalvanized Round Wire Rope**—For Ships' Rigging, Derrick Gays, Ferry Ropes, and all standing purposes.

**Steel Ferry Ropes**—For wide streams. Ferry Blocks supplied.

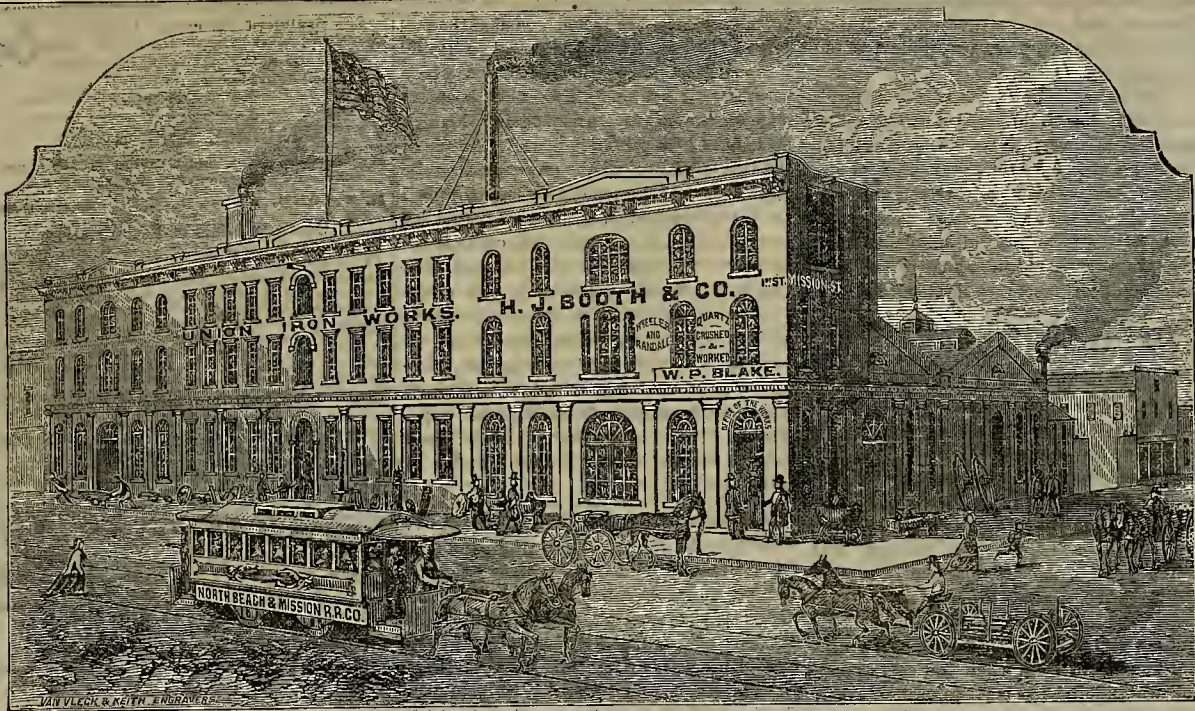
**Iron and Copper Wire Cord**—1/2 to 3/4-inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. 100 lbs. conf.	Cir. 100 lbs. conf.	Cir. 100 lbs. conf.	Link 100 lbs. Link 100 lbs.	Brk'g Wt. Str'n. Load.
2 53 15 33	2 53 15 33	5 100	3/4 266	7 2,300
2 83 2 55	2 83 2 55	6 130	3/4 341	11 3,700
3 170 2 91	3 170 2 91	8 236	3/4 533	19 6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6m9p





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic Hay, Raz, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, P, ae, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior Double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Priores concentrators, Washers, pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Rotors of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

U. J. BOOTH. GEO. W. PRISCOTT. IRVING M. SCOTT.

H. J. BOOTH & CO.

**Machinists and Foundries.**

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**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
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MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
**STEAM ENGINES AND QUARTZ MILLS**  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing.**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Cold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

**WILLAMETTE IRON WORKS,**  
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**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-1y One block north of Couch's Wharf.

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Sacramento.

**WILLIAMS, ROOT & NEILSON,**  
MANUFACTURERS OF  
**CROSS' PATENT BOILER FEEDER,**  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.  
Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

**Dunbar's Patent Self-Adjusting Steam Piston**  
**PACKING**, for new and old Cylinders, manufactured to order.  
Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**JOHN WRIGHT,**  
**Pick Manufacturer,**

No. 229 Fremont street, between Howard and Folsom,  
SAN FRANCISCO.  
Has always on hand a general assortment of PICKS for Quartz and Surface Mining.  
Particular attention is called to his RAISED EYE QUARTZ PICK, which is especially adapted to Quartz Mining, and guaranteed to give good satisfaction. 19v13-y

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
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**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,  
—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.  
Special attention paid to Repairing. 4y-3

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**Foundry and Machine Works,**  
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Manufacturers of

**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.,  
—ALSO—  
Wine, Cider, Cotton and Tobacco Presses of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston-Packing**, requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.  
6v11-1y **DEVORE, DINSMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**  
STOCKTON, CAL.

**KEEP, BLAKE & CO.,**  
MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam**  
**Engines, Horse Powers,**  
Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc.,  
at San Francisco prices. Orders solicited  
13v13-1y and promptly executed.

**LEWIS COFFEY, J. S. RISDON,**  
**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality.  
Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Belles and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.  
PRICES MODERATE. 4y-3

V. KINGWELL. 19v13-1y J. H. WEED.

J. O. HANSCOM, J. S. SMITH, HANSKOM & CO., T. PENDERGAST, W. W. HANSCOM.  
**Etna Iron Works!**  
Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

**Practical Machinists and Iron Founders,**  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,  
Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grinder and Amalgamator,**

Which only needs examination to be appreciated.  
Tyler's Improved Water Wheel,  
Giving greater power at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.  
All wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast White Iron Stamp Shoe, and Dies,"**

None genuine unless obtained from us. Every one warranted.  
Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.  
19v12

**FULTON**  
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**HINCKLEY & CO.,**  
MANUFACTURERS OF

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**Quartz, Flour and Saw Mills,**  
**Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.**

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-y

**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

**MARINE**  
**Locomotive,**  
And all kinds of  
**HIGH PRESSURE**  
**Steam Boilers**  
MADE.  
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.  
All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.  
**Old Boilers Repaired**  
**D. CAMERON.**  
6v12-1y

**BEACHING THE GREAT EASTERN.**—To complete the overhauling of this monster ship, necessary to prepare her for her summer's duty, it was decided to place her upon a gridiron specially constructed for her on the Cheshire side of the river, about one-third the distance between high and low water mark. It was 400 feet long, by 60 feet broad. The operation of placing her upon it was a delicate one, and the experiment was considered somewhat hazardous. But it was a complete success. The Liverpool *Albion* thus speaks of it:

"The first and only attempt was made with the morning tide on Saturday, and as the monster glided quietly and easily to her resting place, it seemed to be the simplest thing in the world. The Great Eastern moved from her moorings shortly after 9 o'clock, drawing 18 feet 6 inches of water. She was propelled by her screw, and was assisted by a tug or two. The tide was at its height at 10.20, and registered 18 feet 1 inch. Captain Sir James Anderson commanded, and was assisted by Mr. Brereton, C. E., successor to the late Mr. Brunel, and Mr. Tucking. She was put side on, and came smoothly and easily to the bed prepared for her without a single hitch. She was favored by smooth water. She was at once secured in her position by powerful anchors and chain cables, and early in the afternoon was high and dry. \* \* \* For eighteen or twenty feet her plates were covered with a peculiar kind of gray weed, like coarse hair, which, to any one standing quite underneath, gave her the appearance of the skin of a huge Polar bear just emerged from his icy bath. The wintry surroundings gave strength to this comparison. Myriads of mussels and barnacles had found a home among this weed, and, though her bottom is much cleaner than was expected, it will take much labor to thoroughly clean the surface."

THE Millmen's Association to-day offer a reward of \$1,000 for the detection and conviction of any amalgam thief employed in any mill, the owner or owners of which are members of the Association.—*Virginia Tresspass*, April 20th.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices  
In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgomery,  
Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**

F. CLERC, B. KLEINCLAUS, W. DEBRIZ,  
**CLERC & CO.,**

Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.  
No. 28 FREMONT STREET, San Francisco.  
9v146m

J. NEWSHAM, J. BIGWOOD.

**SOUTH BEACH IRON WORKS,**

Near corner of King and Third streets, San Francisco.

**MARINE ENGINES,**

AND ALL KINDS OF

**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed. 13v14-1y

**JOHN LOCHHEAD'S**

**Steam Engine Works,**

Beale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**

to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the  
**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**OIL STONE.**—W. C. Holmes left a fine polished specimen of oil stone, procured at Horseshoe Bend, on the Merced river, Mariposa county, at this office yesterday. Mr. Holmes lately discovered a ledge of oilstone, sixty feet in width and 300 or 400 yards long. It is now owned by a company of fifteen. The rock has been tested for lithographic purposes and found to be good.—*Stockton Independent.*

**GEN. A. L. PAGE,** Agent of the Keystone mill, advertises to reduce low-grade chloride ores which will not assay upwards of \$60 per ton, delivered in lots of fifteen tons and upwards, at the rate of \$25 per ton, and will guarantee to return eighty per cent. of the silver as shown by the pulp assay.—*Reese River Reveille.*

**B. F. HOWLAND,**  
**PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street,  
San Francisco.

**Enamelled Cards, Ambrotypes and Sun Prints,** executed in a superior manner. Small pictures colored and enlarged to any size, at one-half the price usually paid for such work. Cards de Visites only \$3 per dozen. Visquettes at \$4 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Cornwall,

**WHO CAME TO WORK LEDGES FOR A NEW YORK** Company, at Humboldt, Nevada, is free for examination of Superintendence of Mineral Properties, in consequence of his commendation and immediate abandonment of those operations.  
Reference—B. W. NUGGET, 528 Clay street, San Francisco. 6v14tf

**JOHN TAYLOR & CO.**  
**IMPORTERS,**  
**AND DEALERS IN**  
**ASSAYERS' MATERIALS,**  
**Druggists' & Chemists' Glassware,**  
**Photographic Stock, Etc.**  
512 and 514 Washington Street,  
SAN FRANCISCO.

**WE** are receiving direct from **NESSELS, LADD & OERTLING** (London) and **BEEKER & SONS** (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, **FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE,** and every article required for **ASSAY OFFICES, LABORATORIES, ETC.** We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A full assortment of **DRUGGISTS' GLASSWARE** and **DRUGGISTS' SUNDRIES, ACIDS** and **CHEMICALS**, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
**E. D. WATERS & CO., Prop'rs.**  
E. D. WATERS, Sen. T. F. CRONISE. J. H. CARMANY,  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.  
The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.  
Terms, \$9 per Year, payable in advance.

**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every  
STEAMER DAY.  
13v13tf

**International Hotel,**  
**JACKSON STREET,**  
**BETWEEN MONTGOMERY AND KEARNY STS.,**  
**SAN FRANCISCO, CAL.**

**THIS OLD ESTABLISHED HOUSE** is in PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

**Prices varying from \$1.50 to \$2 per day for Board and Room.**  
**FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.**

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House free of charge, and to any part of the city for 50 cents 2v12  
F. E. WEYGANT, Proprietor.

**STOCK CERTIFICATES,**  
**STOCK TRANSFER JOURNALS,**  
**STOCK LEDGERS,**  
**ASSESSMENT RECEIPTS,**  
And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press.



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c. &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Green Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

**Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.**

**GODDARD & COMPANY.**

**A. S. CHURCH. S. B. CLARK.**  
**CHURCH & CLARK,**  
IMPORTERS AND DEALERS IN  
**Mediterranean and California**  
**FRUITS, NUTS, CONFECTIONERY, Etc.,**  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 407 Front st., San Francisco.  
Printed list of kinds and prices furnished. 15v14-6m12p

**NEW YORK PRICES.**  
**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewels.  
**WATCH REPAIRING AT NEW YORK PRICES.**  
**WATCH REPAIRING AT NEW YORK PRICES.**

**Pacific File, Reaper and Mower Section**  
**MANUFACTORY,**  
No. 53 Beale Street, Between Market and Mission,  
SAN FRANCISCO.  
Files Recut and warranted as good as new, or no charge.  
The only establishment in the State. We also manufacture Reaper and Mower Sections.  
S. BENSON & CO., Prop'rs.  
12v14-3m

**THE WILCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly Come and see it, or send for Report of the trial.  
**SAMUEL SWIFT, Agent,**  
13v14-6m 203 Kearny street, near Sutter.

**GOVERNMENT HOUSE,**  
Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.  
**THE STREET CARS PASS THIS HOUSE IN** every direction, every ten minutes.  
The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can be heard for one-half they are required to pay at hotels.  
11v13-6m **SANBORN & CO.**

**RADICAL CURE**  
—OF—  
**RUPTURE!**  
Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 621 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.  
**DR. A. FOLLEAU**  
Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
He has no connection with any Agency. 8v13-1y11p

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
**On Saturday, February 9, 1867,**  
**An Entirely New Style of**  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
Call and see them. 8v14

**ITALIAN MANUFACTORY**  
OF  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 SANSOME ST. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

**Copartnership Notice.**  
**THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP** under the firm name of **D. A. MACDONALD & CO.** for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Moldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
**D. A. MACDONALD, J. H. MACDONALD,**  
**JOS. MCGILL, HOWARD CHAPMAN.**  
San Francisco, Feb. 1, 1867. 12v13-3m

**Machinists and Foundries.**

**Miners' Foundry**  
—AND—  
**MACHINE WORKS,**  
Nos. 245 to 255 FIRST STREET,  
San Francisco,  
**HOWLAND, ANGELL & KING,**  
**PROPRIETORS,**

**Manufacturers of Machinery for**  
**QUARTZ MILLS, FLOUR MILLS,**  
**SAW MILLS, SUGAR MILLS,**  
**POWDER MILLS, PAPER MILLS,**

**Steam Engines of all Kinds.**  
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**MINING PUMPS, HOISTING WORKS,**  
**OIL WELL TOOLS, ROCK BREAKERS,**

**Machinery and Castings of all kinds, either** of Iron or Brass.  
**Boilers and Sheet Iron Work in all its** Branches.

**Shoes and Dies of White Iron, manufactured** for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

**Russia Iron Screws, of any degree of fineness.** We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable of any Engine in use.

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**H. B. ANGELL, CYRUS PALMER.**  
13v14-qr

**Vulcan Forge**  
—AND—  
**MACHINE SHOP.**

**L. P. GARCIN,**  
No. 52 Sutter street, between Sansome and Montgomery,  
MANUFACTURER OF

**Printing Presses & Printers' Material,**  
Contractor for all kinds of

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14v14-ly

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**COPPERSMITH,**  
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All kinds of **COPPER WORK** done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
**Repairing promptly and neatly attended to.**  
13v11

**Hazard's Powder.**  
**BLASTING AND SPORTING**  
**GUNPOWDER,**  
SUPERIOR QUALITY.  
**Also, SAFETY FUSE OF ALL KINDS.**  
**EDWARD H. PARKER,**  
Agent for the Hazard Powder Company, 224 California Street.  
13v14tf

**Attention! Attention! Attention!**  
**Look to Your Health in Time!**  
**HEALY'S CURATIVE DILL FOR THE SURE AND** speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the Greatest Remedy of the age. Are you afflicted with Rheumatism?  
Use Healy's Curative Dill!  
Have you the Headache? Use Healy's Curative Dill!  
Have you a Sore Throat? Use Healy's Curative Oil!  
Have you the Toothache? Use Healy's Curative Oil!  
Are you subject to Cramps? Use Healy's Curative Oil!  
And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless the fac simile signature of FRANK HEALY is on the outside wrapper of the bottle.  
Wholesale Agents—Cramer & Brigham, and R. H. McDonald & Co. San Francisco; and at retail by all respectable Drug stores and Grocers. Price, \$1. 2v14-10p

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MANUFACTURERS OF  
**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**

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17v14tf

**To Capitalists,**  
**GOLD QUARTZ MINE, SITUATED IN CALAVERAS** County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$50,000 have been spent in opening them and completing the mill. Dood wagon roads all the way. Apply to  
**BELLOO FRERES, Bankers,**  
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23v13-6m





OF MILWAUKIE.

OVER FIFTEEN THOUSAND MEMBERS:  
And \$2,000,000 Assets!

ALL PROFITS  
Divided Among the Insured.

Dividend Jan. 1st, 1887, \$113,176.26.  
Sacramento References—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14qf11c12p

## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.

CAPITAL STOCK, - - - \$500,000

Trustees: H. P. WAKELEE, THOS. H. SELBY,  
NICHOLAS LUNINO, THOS. BELL,  
CHAS. E. McLANE.

H. P. WAKELEE, MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office on'y for Chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the ad-  
vantages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14 3m

## San Francisco Glass Works FACTORY,

Townsend street, between Third and Fourth

THESE WORKS (WHICH HAVE BEEN TEMPORARILY  
stopped for repairs) are now in operation, and are pre-  
pared to fill orders for every description of

### HOLLOW WARE GLASS,

All sizes of German Flint Prescription Vials, Fluted Pre-  
scriptions, Ovals, Extracts, Panels, Mustards, Sodas, Pack-  
ers' Wine Bottles, etc., etc. Chemists' Glass Ware, Lamp  
Glasses, Flasks, Funnels, Syphons, Tubing, etc., etc. Lamp  
Chimneys of every size and description, equal in quality to  
the best imported.

Private Molds made and lettered to order at short  
notice.

NEWMAN & BRANNAN,  
Proprietors.

15v14-Im

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### STEAMSHIPS

Leave Hongkong Twice a Month,

On the 1st and 15th in the Northeast Monsoon,  
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SOUTHAMPTON AND MARSEILLES,  
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Callag at Singapore, Penang,  
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From Point de Galle their steamers run to Madras,  
Calcutta, and Bombay, twice a month, and once a month  
to King George's Sound, Melbourne and Sydney.

From Hongkong their steamers run constantly to  
Swatow, Amoy, Foochow, Shanghai, and Yokohama.

HONGKONG, 1887. 13v14tf

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BARTLING & KIMBALL,  
BOOK BINDERS,  
Paper Rulers and Blank Book Manufacturers,  
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15v12-3m SAN FRANCISCO.

JOHN DANIEL,  
(SUCCESSOR TO O. GORR)  
MARBLE WORKS,  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Monuments, Tombs, Plumber's Slabs  
Etc., on hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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NATHANIEL GRAY,  
General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.  
Barrow's Metallic Burial Caskets and Cases,  
11

THEODORE KALLENBERG,  
Maker of Models for Inventors.  
MACHINES, MATHEMATICAL, OPTICAL AND PHIL-  
OSOPHICAL Instruments, Scales, Weights, etc. Steel  
Stamps, Dies and Die Sinking, Embossing Stamps. Repair  
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ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
JARVIS JEWETT, AGENT.  
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SOLE MANUFACTURERS OF THE CELEBRATED

H. & L. AXLE GREASE,  
Natoma Street and North Beach,  
2v13-3m SAN FRANCISCO.

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Established 1849.  
C. NUTTING,  
Manufacturer of  
Fire-Proof Doors and Shutters,  
BANK VAULTS, PRISON CELLS, BALCONIES, AWN-  
INGS, GRATINGS, IRON FENCE, STAIRS, Etc.,  
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LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

M. M. COOK & SON,  
No. 801 Battery street,  
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CONSTANTLY ON HAND A LARGE ASSORTMENT

MANILA CORDAGE,  
Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.

Office, at TUBBS & CO'S, 611 and 613 Front street.  
25- Manufactory at the Potrero. 11v14-1q

ANDRADE & PATTERSON,  
MANUFACTURERS AND ENGRAVERS

## METALLIC SIGNS,

AND SIGN PAINTERS,  
Corner of Montgomery and Pine Streets,  
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Door Plates and Office Signs made to order at short  
notice and on reasonable terms. 17v14-1y

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PRINTERS,  
533 Clay street,  
MONTGOMERY STREET.  
19v13-3m

J. M. STOCKMAN,  
Manufacturer of  
PATTERNS AND MODELS,  
(Over W. T. Garratt's Brass Foundry.)  
S. E. Corner of Mission and Fremont sts.,  
6v14tf SAN FRANCISCO.

WM. A. KOLLMYER,  
LOOKING-GLASS  
PICTURE FRAME MAKER,  
No. 646 Clay street,  
Near Kearny street, San Francisco. 19v12-2m

M McNALLY & HAWKINS,  
Plumbers and Gas-Fitters,  
No. 645 Market street,  
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SAN FRANCISCO.

BUILDINGS FITTED UP WITH GAS,  
WATER AND STEAM PIPES, and all work Warranted.  
Have constantly on hand an assortment of Gas-Fixtures,  
Lead and Iron Pipes, Marble Slabs, etc.  
19v13-2q

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## BOALT & STETEFELDT, Metallurgists and Mining Engineers

AUSTIN, NEVADA.  
Western Branch of ADELBURG & RAYMOND, No. 90  
Broadway, New York. 11v11

G. W. MAYNARD. J. H. TIEMANN.  
MAYNARD & TIEMANN,  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
19v12-1y

## EUROPEAN METALLURGICAL WORKS,

—AND—  
Practical Mining School,  
Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE PROPRIETORS are at all times prepared to work or test  
Ores sent to this establishment—either in large or small  
quantities—by such process as may be found best adapted to  
their chemical character, after a careful analysis has been  
made. Test lots of Ore adapted to the smelting process at-  
tended to. Sulphurets, pyrites, and the (so called) "rebel-  
lious ores," are having special attention paid to their suc-  
cessful treatment. Assaying in the humid and dry way.  
Also, refining by cupellation, done at moderate rates.

PRACTICAL MINING SCHOOL.  
The proprietors—encouraged by numerous applications  
from gentlemen desirous of pursuing the study of practical  
metallurgy—have concluded to admit parties on reasonable  
terms. Having in their Mill all the necessary appli-  
ances for crushing, roasting, amalgamating, smelting, re-  
fining and assaying, as also a well extended Laboratory for  
the analysis of Ores and Minerals, a good opportunity is  
here offered to acquire a sound practical knowledge of the  
business.  
S. P. KIMBALL, J. R. MURPHY.  
19v10

## MOSHEIMER'S Metallurgic Works

And Practical School for Assaying  
and Metallurgy.

THE UNDERSIGNED HAS REOPENED METALLUR-  
gic Works, and is prepared to reduce any kind of Ores,  
by Smelting, Amalgamating, or other processes, that  
the nature of the ore may require.

Practical instructions given in Assaying, all branches of  
Metallurgy and Technology.

Furnishes Plans and Estimates for the erection of Quartz  
Mills, Smelting and other Reduction Works.

Having carefully studied the science of Concentrating  
Ores, I can offer better concentrating machinery than any  
in use in California, and especially such as will save the  
fine or floating gold and sulphurets.

CONSULTATION OFFICE:  
328 Montgomery street, San Francisco.  
J. MOSHEIMER,  
26v13-3m Engineer and Metallurgist.

## J. A. BAUER, Chemical Laboratory,

AND DRUG STORE,  
644 Washington Street. [Established 1849.]  
SAN FRANCISCO.

Careful Analyses made of

Ores, Minerals, Waters, Oils, Liquors,  
Wines, Products of Art, etc.

## Pharmaceutical Preparations Made to Order.

Opinion given on Chemical Questions and Oology.

Particular attention paid to Analyses of all kinds, in  
cases where legal questions are involved.

Pure Nitric Acid. Nitrate of Silver. Gold Chloride, Platin  
Chloride, Sodium Amalgam, Sulphate of Copper, etc., for  
sale.  
12v14-6m

## EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

WOOD AND COAL,  
No. 513 Bush street, between Dupont and Stockton,  
14v14-6m SAN FRANCISCO.

## Quartz Mill Construction and Superintendence.

THE UNDERSIGNED IS AT PRESENT OPEN FOR AN  
engagement as a working Superintendent in the con-  
struction or operation of a Quartz Mill. Has had five years  
steady and successful experience in working cream Wash-  
ing, and is practiced in saving sulphurets and the treatment of  
rebellious ores. Is prepared to furnish references for all  
the necessary qualifications of an intelligent, faithful and  
reliable quartz operator. P. M. SEAW.  
San Francisco, care Mining and Scientific Press. 10v14-3m

## New Mining Advertisements.

### Cineo Sinaloa Gold and Silver Mining Company.

Copala, Sinaloa, Mexico.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the first day of May,  
1887, an assessment of ten (10) cents per share was levied  
upon each and every share of the capital stock of said  
Company, payable immediately in United States gold and  
silver coin, to the Secretary, No. 623 Clay street, San Fran-  
cisco, California.

Any stock upon which said assessment shall remain un-  
paid on the thirty-first day of May, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Saturday, the twenty-second day of June, 1887, to pay  
the delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.  
EDWARD C. LOVELL, Secretary. m  
Office, No. 523 Clay street, San Francisco.

## Chiptonea Mining Company—District of Ures,

Sonora, Mexico.

NOTICE.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the  
twenty-eighth day of March, 1887, the several amounts  
set opposite the names of the respective shareholders, as  
follows:

Names	No. Certificate.	No. Shares.	Amount.
Lohse, J. F.	87	30	\$150 00
Mosheimer, Jos.	56	26	125 00
Mosheimer, Jos.	57	26	130 10

And in accordance with law, and an order of the Board of  
Trustees, made on the twenty-eighth day of March, 1887, so  
many shares of each parcel of said stock as may be neces-  
sary, will be sold at public auction, at the salesroom of  
J. Middleton & Son, No. 404 Montgomery street, San Fran-  
cisco, California, on the twentieth day of May 1887, at  
the hour of 12 o'clock, M., of said day, to pay said delin-  
quent assessment thereon, together with costs of adver-  
tising and expenses of sale.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. m4

## Chalk Mountain Blue Gravel Company.—Lo-

cation of Works: Nevada County, California.

Notice is hereby given, that at a meeting of the Board  
of Trustees of said Company, held on the first day of  
May, 1887, an assessment of one dollar (\$1) per share was  
levied upon the capital stock of said Company, payable  
immediately, in United States gold and silver coin, to the  
Secretary.

Any stock upon which said assessment shall remain un-  
paid on the first (1st) day of June, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the seventeenth (17th) day of June,  
1887, to pay the delinquent assessment, together with costs  
of advertising and expenses of sale. By order of the Board  
of Trustees.  
J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner Washington and  
Sansome streets, San Francisco, California. may4

## Diana Gold and Silver Mining Company.—Lo-

cation of Works: Lander County, Nevada.

Notice.—There are delinquent upon the following de-  
scribed stock, on account of assessment levied on the twen-  
ty-second day of March, 1887, the several amounts set  
opposite the names of the respective shareholders as fol-  
lows:

Names	No. Certificate.	No. Shares.	Amount.
F. H. Allen	230	5	\$15 00
I. C. Bateman	211	4	20 00
E. G. Bickelman	333	17 1/2	88 75
J. B. Bickelman	340	56	150 10
John Hastings	214	10	50 00
John Hastings	242	5	25 00
John Hastings	246	5	25 00
Wm. Friedman	402	1	5 00

And in accordance with law, and an order of the Board  
of Trustees, made on the twenty-second day of March, 1887,  
so many shares of each parcel of said stock as may be ne-  
cessary, will be sold at public auction, by Jones & Ben-  
dixen, at the office of the Secretary, corner Front and Clay  
street, San Francisco, on the fourth day of June, 1887, at  
the hour of 12 o'clock, M., of said day, to pay said delin-  
quent assessment thereon, together with costs of advertising  
and expenses of sale.

N. C. PASSETT, Secretary.  
Office, cor. Front and Clay streets, San Francisco. my4

## I. X. L. Gold and Silver Mining Company.—Lo-

cation: Silver Mountain District, Alpine County, Cal.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the thirtieth day of  
April, 1887, an assessment of one dollar and fifty cents (\$1.50)  
per share was levied upon the capital stock of said Com-  
pany, payable immediately in United States gold and silver  
coin, to the Secretary, at his office, in the store of J. O.  
Hodge & Co., 413 and 420 Clay street, San Francisco, Cal., or  
to John O. Shaven, Superintendent, at Silver Mountain.

Any stock upon which said assessment shall remain un-  
paid on the thirtieth (30th) day of May, 1887, shall be  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Monday, the seventeenth day of June, 1887,  
to pay the delinquent assessment, together with costs of  
advertising and expenses of sale. By order of the Board of  
Trustees.  
S. B. STEVENS, Secretary.  
Office, 413 and 420 Clay street. m4

## Keystone Mining Company. Location of Works

Copper Canon District, Copperopolis, Calaveras County,

California.

NOTICE.—There are delinquent upon the following de-  
scribed stock on account of assessment levied on the twen-  
tieth day of February, 1887, the several amounts set opposite  
names of the respective shareholders, as follows:

Names	No. Certificate.	No. Shares.	Amount.
W. N. Corhill	196	56 1/2	\$582 50
J. H. Corhill & Co.	157	56 1/2	582 50
J. H. Corhill & Co.	157	37 1/2	375 00
J. H. Corhill & Co.	222	75	750 00
A. J. Corhill	77	57	500 00
A. J. Corhill	106	10	100 00
P. S. Fogg	106	13	125 00
P. S. Fogg	107	10	100 00
P. S. Fogg	208	10	100 00
N. J. Dooley	215	37 1/2	375 00
L. H. Hentscher	53	5	50 00
Willard Hodges	135	50	500 00
William Jones	41	10	100 00
William Jones	76	110	1100 00
William Jones	75	5	50 00
William Jones	101	25	250 00
William Jones	216	15	150 00
William Jones	223	5	50 00
Kimball & Cutting	95	11	110 00
Kimball & Cutting	96	10	100 00
Kimball & Cutting	96	10	100 00
Kimball & Cutting	214	10	100 00
Kimball & Cutting	214	14	140 00
Kimball & Cutting	227	25	250 00
Lewis Hewlett	231	110	1100 00
Levi Hewlett	231	75	750 00
Nicolas Ratto	283	8	80 00
Riley Senter	99	25	250 00
J. P. Sutton, Trustee	224	39 1/2	395 00
George B. Castle	230	100	1000 00
B. H. Baker	175	25	250 00
B. H. Baker	191	15	150 00
B. H. Baker	191	15	150 00
B. H. Baker	191	25	250 00
B. H. Baker	191	15	150 00
C. J. Morrill	151	15	150 00
C. J. Morrill	151	25	250 00
Isaac F. Crutt, Trustee	165	5	50 00
Isaac F. Crutt, Trustee	193	8	80 00
John M. Glidden	219	200	2000 00
John M. Glidden	219	177	1770 00
Glidden & Williams	145	50	500 00
Glidden & Williams	179	50	500 00
Glidden & Williams	183	85	850 00
Glidden & Williams	183	60	600 00
Jacob Hall	147	20	200 00
Jacob Hall	192	33	330 00
Ischabod Howland	132	10	100 00
Ischabod Howland	133	10	100 00
William Babson	146	20	200 00
William Babson	187	33	330 00

And in accordance with law, and an order of the Board of  
Trustees, made on the twentieth day of February, 1887, so  
many shares of each parcel of said stock as may be neces-  
sary will be sold at public auction, by John Middleton & Son,  
No. 404 Montgomery street, San Francisco, California,  
on the twentieth day of May, 1887, at the hour of 1 o'clock P.  
M., of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

O. P. SUTTON, Secretary.  
Office, 404 California street, San Francisco. may4



**Lady Franklin Gold and Silver Mining Company.**—Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1887, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 345 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of June, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. S. LUTY, Secretary.  
Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. m4

**Whitman Gold and Silver Mining Company.**—Location of Works: Indian Springs District, Lyon County, Nevada.

The Annual Meeting of the stockholders of the Whitman Gold and Silver Mining Company, for the election of Trustees and the transaction of such other business as may come before the Company, will be held in San Francisco, at the office of Chas. Mayne, Esq., No. 535 Clay street, on TUESDAY, the fourth day of June, 1887, at twelve o'clock, noon.

THOS. W. COLBURN, Secretary.  
San Francisco, May 1, 1887. m4-5

**Mining Notices--Continued.****Arizona Consolidated Mining Company, Eureka District, Arizona Territory.**

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, will be held on MONDAY, the sixth day of May, 1887, at 7 o'clock P. M., at the office of the Secretary, 611 Clay street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

G. W. BUNNELL, Secretary.  
Office, No. 611 Clay street, San Francisco. ap20

**Adelia Gold Mining Company, Rock Creek, Sierra County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of April, 1887, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. C. TAYLOR, No. 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the ninth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of May, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. C. TAYLOR, Secretary.  
Office, No. 429 Pacific street, San Francisco. ap13

**Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.**

Notice—There are delinquent, upon the following described stock, on account of assessment levied on the nineteenth day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Baird, H. H.	137	5	\$25 00
Blanchard, William	138	5	25 00
Calvert, William	139	5	15 00
Crandell	138	200	40 00
Crandell, O. L.	138	10	50 00
Domell, Wm M.	127	3	15 00
Donnell, Wm M.	141	1	5 00
Donnell, Wm M.	141	10	50 00
Dowling, Mrs E. N.	1	1	5 00
Dowling, Mrs E. N.	115	1	5 00
Eggers, G. H.	126	15	75 00
Fiedler, P. C.	99	20	100 00
Gatelli, B.	145	5	25 00
Gatelli, B.	145	3	15 00
Harsanyi, A.	151	74	365 00
Harsanyi, M. J.	119	40	200 00
Hyatt, Caleb	129	2	10 00
Hyatt, Caleb	131	3	15 00
Hyatt, Caleb	151	7	35 00
Hyatt, Caleb	151	13	65 00
Leisewitz, H.	64	10	50 00
Leisewitz, H.	65	15	75 00
Leisewitz, H.	65	20	100 00
Leisewitz, H.	65	30	150 00
Leisewitz, H.	133	7	35 00
Loomis, W. H.	163	18	90 00
Mollitor, A. P.	163	150	750 00
Mollitor, A. P.	60	30	150 00
Mollitor, A. P.	91	20	100 00
Mollitor, George, in trust for A. P. Mollitor	118	1	5 00
Noyes, L. W.	136	2	10 00
Newman, S.	139	3	15 00
Newman, S.	157	15	75 00
Nelson, Peter	178	12	60 00
Park, H. J.	203	60	300 00
Parsons, Chas A.	162	2	10 00
Peterson, Niel	161	5	25 00
Patton, Farmella O.	205	4	20 00
Ronay, Hyacinth	160	10	50 00
Smith, R. H.	169	3	15 00
Richner, W.	209	10	50 00
Ullman, N.	194	25	125 00
Valliant, J.	204	10	50 00
Valliant, J.	207	18	90 00
Vogt, C. H.	126	10	50 00
Woodhams, Oscar	17	20	100 00
Woodhams, Oscar	13	20	100 00
Woodhams, Oscar	20	20	100 00
Woodhams, Oscar	21	20	100 00
Woodhams, Oscar	22	20	100 00
Woodhams, Oscar	24	3	15 00
Woodhams, Oscar	94	25	125 00
Woodhams, Oscar	95	5	25 00
Woodhams, Oscar	133	3	15 00
Woodhams, Oscar	155	5	25 00
Woodhams, Joseph	166	5	25 00
Woodhams, Alfred	166	5	25 00
Woodhams, Lucy A.	169	25	125 00
Woodhams, Mary E.	170	25	125 00
Wolf, A.	174	10	50 00
Winn, Richard	179	5	25 00
Woodward, W. A.	170	25	125 00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 315 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.  
Office, 315 Montgomery street, San Francisco. ap2

**Postponement.**—The above sale is hereby postponed until Wednesday, the twenty-second day of May, 1887, at the same hour and place. By order of the Board of Trustees.

M. G. ELMORE, Secretary.  
ap27

**PATENT BUSINESS.**

We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent agency in New York city, and having a faithful and reliable associate in Washington City, we are now better than ever before prepared to secure the claims of our applicants, in a careful, prompt and efficient manner.

DEWEY & CO.,  
San Francisco, Jan. 1887. Patent Solicitors.

**Botoplas Mining Company, Botoplas District, State of Chihuahua, Mexico.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of April, 1887, an assessment (No. 3) of two (\$2) dollars per share was levied upon the assessable capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 811 Montgomery street, up stairs, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixteenth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. MARTINON, Secretary.  
Office, 811 Montgomery street, up stairs, San Francisco, Cal. ap13

**Camargo Gold and Silver Mining Company, Lander County, Nevada.**

Notice—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Camp, Jas.	71	5	\$10 00
Drinkhouse, J. A.	6	3	6 00
Dinkelspiel, L.	51	3	6 00
Harker, W. B. E.	23	10	20 00
Harker, W. B. C.	24	10	20 00
Harker, J. W.	134	3	6 00
Jacob, N. B.	85	4	8 00
Fussett, N. C.	132	20	100 00
Gray, Asaph.	133	3	6 00
Lauder, B. C.	69	6	12 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1887, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

**De Soto Gold and Silver Mining Company.**—Location of Works: Star District, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of April, 1887, an assessment of sixty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 58 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the first day of June, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the nineteenth day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN M. RICHMOND, Secretary.  
Office, No. 58 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, California. ap27

**Even Consolidated Copper Mining Company.**

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on THURSDAY, the twenty-third day of May, 1887, at 3 o'clock P. M., at No. 523 Merchants street, Room No. 3, San Francisco, California. By order of the President.

my34w R. S. CLYDE, Secretary.

**Dividend Notice.**—San Francisco, April 26th, 1887.

At a meeting of the Trustees of the GOLDEN RULE MINING COMPANY, of Tuolumne County, Dividend No. 8 was this day declared of Fifty Cents per share, and made payable at the office of the Company on and after the first day of May, 1887.

J. B. RUSSELL, Secretary.  
Office, No. 5, over Donohoe & Kelly's Bank, southeast corner Sacramento and Montgomery streets. ap27-1

**George Washington Gold and Silver Mining Company.**—Location of Works: Silver Mountain District, Alpine County, Cal.

Assessment No. 18.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of April, 1887, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, only.

Any stock upon which said assessment shall remain unpaid on the tenth day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. G. WOOD, Secretary.  
Office, 333 Montgomery street, San Francisco. ap9

**Gold Quarry Company. Location of Works: Placer County, State of California.**

Notice—There are delinquent upon the following described stock, on account of assessment levied on the 21st day of March, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
George Atwood	14	100	\$2,000 00
JAMES FREELAND	15	50	1,000 00

And in accordance with law, and an order of the Board of Trustees, made on the 21st day of March, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Cobb & Sinton, auctioneers, at the office of the Company, 705 Montgomery street, (Room No. 4) San Francisco, Cal., on Monday, the thirtieth day of May, 1887, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.  
Office Room No. 4, 705 Montgomery street, San Francisco, Cal. ap27

OLNEY & CO., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. no10

**Engraved to Order.**—Persons who desire to illustrate their individual establishments or business, should give us their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

DEWEY & CO.,  
Patent Agents, Publishers and Job Printers, 505 Clay st.

**Illegal Supplemental Advertising.**—It would be well for Mining Companies, whose advertisements are repeatedly appearing in the Supplements of daily papers, to inquire into the legality of that class of advertising.**Hope Gravel Mining Company.**—Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of April, 1887, an assessment (No. 1) of one dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to Davin Wilson, Secretary, at the office of the Company, No. 529 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twenty-second day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. my20

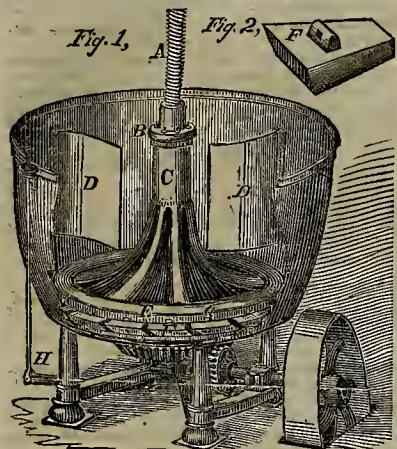
**North Star Gold and Silver Mining Company, Reese River Mining District, Lander County, Nevada.**

Notice—There are delinquent upon the following described stock, on account of assessment levied on the fourteenth day of March, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
T E Lindenberg.	41	1	\$ 5 00
W B Gummings.	311	7 1/4	37 50
Joseph Arel.	422	1	5 00
Alfred H.	147	2 1/2	12 50
Saltoun Hatt.	144	5	25 00
Chas J Dreyer.	437	6 3/4	33 75
Geo H Faulkner.	549	1	5 00
Oliver Ames.	456	60	250 00
Oliver Ames.	458	60	250 00
Oliver Ames.	459	10	50 00
Oliver Ames.	450	10	50 00
John Kirtz.	457	1	5 00
Cyrus Lathrop.	461	20	100 00
Jerome W Tyler.	462	10	50 00
Jerome W Tyler.	463	10	50 00
Jerome W Tyler.	464	10	50 00
Jerome W Tyler.	465	10	50 00
Jerome W Tyler.	466	10	50 00
Jerome W Tyler.	467	10	50 00
Jerome W Tyler.	468	10	50 00
Jerome W Tyler.	469	5	25 00
Jerome W Tyler.	490	5	25 00
Jerome W Tyler.	491	5	25 00
Jerome W Tyler.	492	5	25 00
Jerome W Tyler.	493	5	25 00
Jerome W Tyler.	494	5	25 00
Jerome W Tyler.	495	5	25 00
Jerome W Tyler.	496	5	25 00
Jerome W Tyler.	497	5	25 00
Jerome W Tyler.	498	5	25 00
Jerome W Tyler.	499	5	25 00
Jerome W Tyler.	500	5	25 00
Jerome W Tyler.	501	5	25 00
Jerome W Tyler.	502	5	25 00
Jerome W Tyler.	503	5	25 00
Jerome W Tyler.	504	5	25 00
Jerome W Tyler.	505	5	25 00
Jerome W Tyler.	506	5	25 00
Jerome W Tyler.	507	5	25 00
Jerome W Tyler.	508	5	25 00
Jerome W Tyler.	509	5	25 00
Jerome W Tyler.	510	5	25 00
Jerome W Tyler.	511	5	25 00
Jerome W Tyler.	512	5	25 00
Jerome W Tyler.	513	5	25 00
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Jerome W Tyler.	519	5	25 00
Jerome W Tyler.	520	5	25 00
Jerome W Tyler.	521	5	25 00
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Jerome W Tyler.	523	5	25 00
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Jerome W Tyler.	526	5	25 00
Jerome W Tyler.	527	5	25 00
Jerome W Tyler.	528	5	25 00
Jerome W Tyler.	529	5	25 00
Jerome W Tyler.	530	5	25 00
Jerome W Tyler.	531	5	25 00
Jerome W Tyler.	532	5	25 00
Jerome W Tyler.	533	5	25 00
Jerome W Tyler.	534	5	25 00
Jerome W Tyler.	535	5	25 00
Jerome W Tyler.	536	5	25 00
Jerome W Tyler.	537	5	25 00
Jerome W Tyler.	538	5	25 00
Jerome W Tyler.	539	5	25 00
Jerome W Tyler.	540	5	25 00
Jerome W Tyler.	541	5	25 00
Jerome W Tyler.	542	5	25 00
Jerome W Tyler.	543	5	25 00
Jerome W Tyler.	544	5	25 00
Jerome W Tyler.	545	5	25 00
Jerome W Tyler.	546	5	25 00
Jerome W Tyler.	547	5	25 00
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Jerome W Tyler.	552	5	25 00
Jerome W Tyler.	553	5	25 00
Jerome W Tyler.	554	5	25 00
Jerome W Tyler.	555	5	25 00
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## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. B is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Millers' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 5v14tt

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merit.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

**PACIFIC FOUNDRY,**  
1v1 San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

**PICKERING'S GOVERNORS**  
For Steam Engines.

**Giffard's Injectors,**  
For Feeding Boilers.

**STODDART'S IRON WORKS,**  
Beale Street, San Francisco.  
23v12 3m

## FOR SALE!

**PATENT RIGHT OF HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to

**E. O. HUNT,**  
25 SECOND STREET,  
11v24 San Francisco

**DUDGEON'S PATENT Hydraulic Lifting Jacks**  
—AND—  
**BOILER PUNCHES,**  
16v14 Eighth street, cor. Minna. q

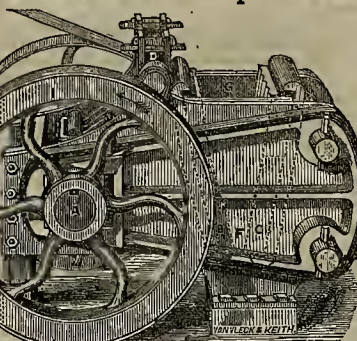
**REMINGTON'S ARMORY,**  
Agency, 310 Washington st., San Francisco.  
PRICES REDUCED!

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Game, an entirely new most perfect Game. All the new models for sale very low.

12v15tt

**ALBERT E. CRANE.**

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.**

The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1.—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600

No. 2.—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....850

No. 3.—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.**

The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1866.

JAMES BRODIE, Esq., San Francisco: Dear Sir:—I have pleasure in informing you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,

Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED OBERMAN AMALGAMATING BARREL.** This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A diagram, with explanatory description of this machine, will be found in the Mining and Scientific Press, of September 29th, 1866.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1866.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street, San Francisco.

**Hooker's Patent Pump Valve.**

A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve, which shows the India rubber facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C.

The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, are for sale by

**120 Front street, San Francisco.**

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

See illustration and description of this Pump, published every other week in this paper. 16v14tt

**Notice to Miners, Well-Borers and Water Companies.**

**M. PRAO** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for this branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved pattern, for vessels of all classes. Also, Ship Plumbing done.

**8v13-ly** Stove Store, No. 125 Clay street, below Davis.

**BLAKE'S QUARTZ BREAKER!**

**PRICES REDUCED!**

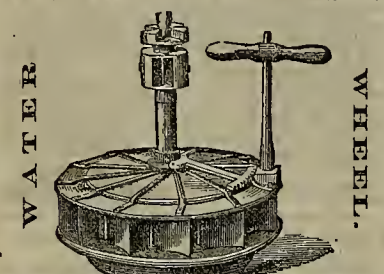
MACHINES OF ALL SIZES FOR SALE

—BY—  
**WM. P. BLAKE,**  
Corner First and Mission streets, or Box 2,077  
3v13t SAN FRANCISCO.

**To the Mining Community.**

**THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS** constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 551 Harrison street, San Francisco.

**WILLIAM WILLIAMS,**  
Practical Mining Engineer.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALED AND UNRIVALED IN the United States or the world, have been fully tested for this coast, more than thirty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

California: Raymond & Co., E. Stockton, Poisson; O. Simmons, Oakland, (Mill at Clear Lake); Moran & Co., Lexington, Santa Clara County; J. Y. McNihan, Lexington Santa Clara County. Send for Circular to

**KNAPP & GRANT,**  
Agents for California.

26v13-lyq 310 Washington street, San Francisco

HUNTER'S  
Eureka Amalgamator!

**FOR WORKING THE SANDS AS THEY PASS FROM** the battery. The coarse particles of sand are reduced to pass through a No. 6 screen that would pass through a No. 5 in the battery; the fine flour gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The machine is four feet eight inches square on the bottom, and covered with iron dies 1 1/2 inches thick by four inches wide, extending across the bottom with alternate strips of wood on end of the same width. The rubbers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between rubbers. The box is also lined with copper plates. The machine is set in operation by eccentrics, giving an oscillating motion; and the rubbers are suspended on iron hangers, and adjusted by set screws.

One-fourth of a horse-power is sufficient to run one machine of ten tons capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from WM. WATT, Esq., of the Eureka Mill, will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is from rock that pays \$50 per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I have ever seen. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it, but the best recommendation I can give is that I want four more. Will you please go to the Vulcan Foundry and order them."

On the first of April I had an order for two more, for the Fulton Foundry, First street, will be promptly attended to.

**P. S.—Patent allowed.**

HUNTER'S  
IMPROVED CONCENTRATOR.

**THE INVENTOR OF THE ABOVE RECENTLY IMPROVED** Mining is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

For full description of this machine, see in operation at the Union Foundry, in this city, up stairs. 14v14

**To Quartz Miners and Others.**

**NOTICE!**

**I WISH TO CALL YOUR ATTENTION TO A PULVERIZER** of my own invention, which I have called the

**HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tallings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14-3m

**STRONG & CO'S**

**CELEBRATED UNION PAN!**

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction of any Pan in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by

**22v13** O. W. STRONG, Assayer.

**NELSON & DOBLE,**  
AGENTS FOR;

**Thomas Firth & Sons' Cast Steel, Files,**  
Etc., Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

**Mill Picks, Sledges, Hammers, Picks,**  
Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

**319 and 321 Pine Street,**  
Between Montgomery and Sansome, San Francisco.

**V. CUSHING, Agent**

**For the Purchase and Shipping of Machinery**  
OF ALL KINDS.

**SPECIAL ATTENTION GIVEN TO QUARTZ MILL** Machinery and Findings, and Miners' Material of every description. **W. H. CUSHING**, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14tt

By Express.—Two cents per copy will be added to our usual rates of subscription (to pay Wells, Fargo & Co's) on papers sent by express. If connecting expresses in the interior make additional charges, subscribers must themselves settle the same.

[Written for the Mining and Scientific Press.]  
The "Gravity" Question—Again.

GRASS VALLEY, April 22, 1867.

**EDITORS PRESS:**—"Machinist," in your issue of the 19th ult., says "It is easy to see how I fell into the error," etc. Now I am not yet convinced that I am in error.

He says: "The center of the earth is the center of gravity for all the matter contained in the earth." This is an astronomical fact which I am not prepared to deny; but I do not believe that the attraction of the whole mass acts precisely as if it [the mass] were all collected at that point; and to convince him that such is not the case, and that he may possibly be in error himself, I will quote from some of the "elementary" works to which he refers me, and which I have been studying carefully for the last twenty years, only to find that they, like all other things of human origin, are fallible. I will now quote from Mitchell's Orbs of Heaven, page 104: "A power does seize the equator and plunges successive halves of it beneath the plane of the ecliptic; but do you now demand what power seizes the earth's protuberant equator and tilts it successively towards every point of the compass? I answer that the power is lodged in the sun and moon, and it is their combined action which works out these wonderful results. In case the sun and moon were so situated as always to be in the plane of the earth's equator, then they would have no power to change the position of the equator. But we know they are not in this plane, except when passing through it, and are found sometimes on the north and sometimes on the south side of it. Wherever either of them may be, the nearest half of the redundant matter about the earth's equator will be more forcibly attracted than the remote half, and the equator will be tilted toward the attracting body," etc. Again, on the same page, he says: "Thus does the earth's whole solid mass sway to the motion of the ring of matter heaped up around the equator." Again, on the same page: "Every particle of matter attracts every other particle of matter, and it is impossible for the sun and moon to exert any influence on the equatorial ring of matter which belongs to our globe, without feeling in their turn the reaction of this ring on themselves. The sun, from its size and distance may escape any visible effect; not so the moon. Her proximity to the earth, and her diminutive mass render her peculiarly sensitive to the influence of the redundant matter at the earth's equator; and as her attraction tilts the plane of the earth's equator, so does the attraction of the equatorial ring tilt the plane of the moon's orbit."

How now about the center of gravity? If the equatorial ring attracts the moon with more force than any other part of the globe, will it not act in the same manner on a mass of iron? or if not, why not? In this connection, I would call the attention of "Machinist" to the assertion made in the elementary works he refers me to, "That if a piece of lead weighing four pounds be taken half way down to the earth's center, it will weigh only two pounds. I think there is a little geometrical mistake here. I am under the impression (not positive) that it would weigh only one-half pound, or one-eighth of what it weighed at the surface. Will "Machinist" give this problem a few days close study, and give us the result.

A. C. D.

**A FORMIDABLE WAR SHIP.**—When the Kalamazoo is finished, she will be the most formidable war ship afloat. Her armor will be fifteen inches thick entirely around her, with two turrets of eighteen-inch thickness. These turrets will each be armed with twenty-inch guns, carrying balls of 1,080 pounds weight. With four such monster guns, and with iron sides fifteen and eighteen inches thick, she can place herself with perfect safety in the very midst of a whole fleet of ordinary ironclads. The ironclads of Europe will be hut scare-crows in her path. The last number of *Blackwood's* (Edinburgh) Magazine contains an article paying a high compliment to the efficiency of American ironclads, by the side of which the writer thinks the English ironclads appear to quite a disadvantage.



**A FEAST OF REASON.**—Prof. James Hall, says a correspondent of the *Evening Post*, New York, March 16th, gave last night a select entertainment at the State Museum of Natural History. A number of celebrities were present. After the dinner, which was without wine, the health of the Professor was proposed, and responded to in an eloquent address. The Professor is an enthusiast, and his reply was a lecture on American geology, intensely interesting. He said that a previous continent once filled the North Atlantic ocean, and drift from it produced America. The first land was the Adirondac region, then the highlands, after which the other parts of the State and continent came into being. The higher mountains were produced last, even in the Adirondac country. The iron of Essex county, a fine magnetic ore, was deposited there in beds instead of in veins, and was the most valuable in this part of the continent. The geology of New York had been, he remarked, more thoroughly studied than that of any other part of the world. Even in New England learned men had made mineralogy rather than geology their study, and had let lessons from the rocks comparatively alone. In Europe all writers on geology began by quoting the natural history of New York. So also in Canada.

**Job Printing Press for Sale--\$250.**

A Largest Size (half medium) **RUGOLES' BEST JOB PRESS**, in fine order and good as new, can be had for **\$250**, cash—lowest price. Warranted. Apply to  
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Devotes special attention to **CANCER, PARALYSIS and CHRONIC DISEASES.** Consultation free.  
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A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*; or address **DEWEY & VAUGHN**, Mountain Messenger office, Downieville, Sierra County, Cal.  
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**ADMISSION:**

To all parts of the Gardens..... **25 Cents.**  
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**NEW ATTRACTIONS** are being constantly added to all departments.

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A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**

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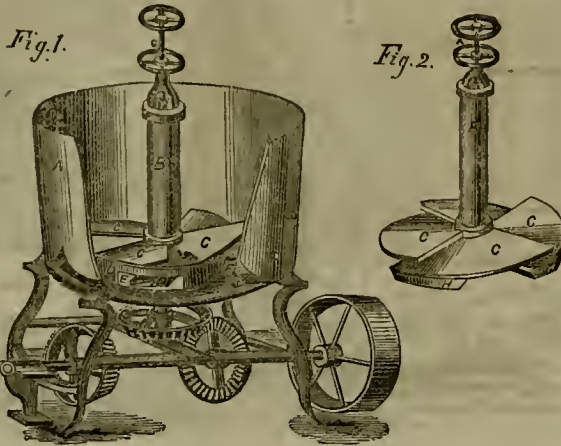
Steamer **CAPITAL**.....CAPT. E. A. POOLE  
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One of the above steamers leave **BROADWAY WHARF** at 4 o'clock P. M. **EVERY DAY** (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Steamships **ALAX, PACIFIC, ORIZABA, CALIFORNIA, ACTIVE** and **SENATOR**, leave, as advertised, for Honolulu, Portland, Oregon, New Westminster, British Columbia, Victoria, V. I., Santa Barbara, San Pedro, and San Diego.

Office of the Company, northeast corner of Front and Jackson streets.  
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President.  
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**Gaston's Screw Grinder and Amalgamator**

The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the hub of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is effectually rubbed by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed in and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, **H. A. GASTON**, at Cosmopolitan Hotel, San Francisco; or **R. L. THOMAS, Esq.**, Virginia City, Nevada.  
1v14qr



**Portable Steam Engines!**

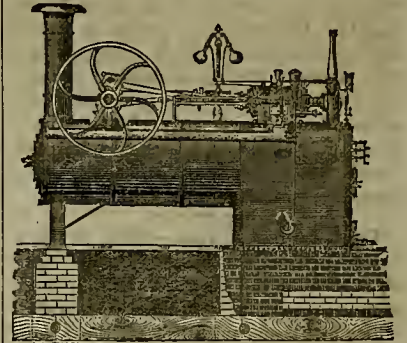
"Hoadley's" and "Hittinger's" Make,



**HOADLEY'S.**

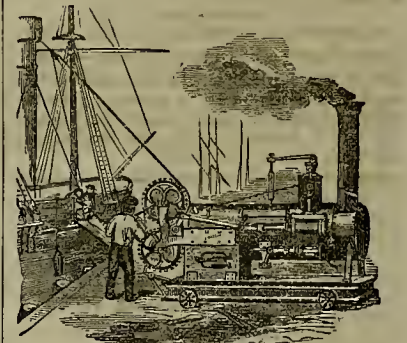
**FOUR SIZES,**

**8, 10, 12, and 15-Horse Power,**



**HOADLEY'S.**

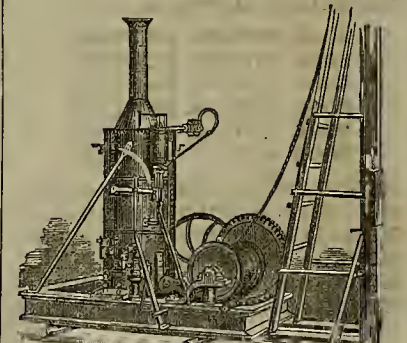
**3 to 40-Horse Power.**



**HITTINGER'S.**

**THREE SIZES,**

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**COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, AND ECONOMY, with the Minimum of weight and price.**  
These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises), in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.  
All sizes on hand from 3 to 30 horse power, with and without carriages.  
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Stair Work of all kinds,  
MADE TO ORDER  
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**PACIFIC BILLIARD  
TOURNAMENT.**

Open to all Players on the Pacific Coast.

A **GRAND BILLIARD TOURNAMENT** FOR THE CHAMPIONSHIP of the Pacific Coast will take place at **Congress Hall, San Francisco,**

On the 16th, 17th and 18th days of May next.

First Prize—A splendid **COLD MOUNTED CUE** and the **CHAMPIONSHIP.**

There will also be four other prizes in cash, ranging from one hundred dollars up.

The New York American Billiard Players' Association's rules will be strictly adhered to in this contest.

A Committee of Billiard Players will be appointed to regulate the details of the Tournament.

Gentlemen wishing to participate in the contest will please communicate with  
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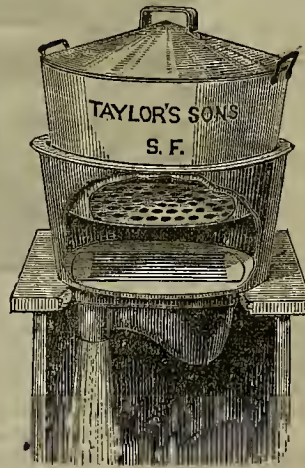
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**COAL DISCOVERY IN ALAMEDA COUNTY.**—Mr. John S. Royal has recently made what bids fair to be a valuable coal discovery in Corral Hollow, in township three east and three south from Mount Diablo meridian. The coal was discovered at a point in a ravine near where the late rains had washed out the earth some thirty feet deep. Mr. Royal assures us that the vein is fully eight feet thick. Being near the surface, it is, of course, very much decomposed, and shows the unchanged coal only in thin seams, one of which, however, is some six or eight inches thick. The character of the samples brought in give evidence of a most promising vein, and its position is such that it will require but a small amount of capital to develop it. It is convenient of access by an excellent road already constructed to the San Joaquin river, while the line of the Pacific Railroad from San José to Stockton is located within four miles of the mine. Coal has been known to exist in this vicinity for several years past, and several hundred tons have been brought from thence to this city. It is a portion of the Mount Diablo coal bed, but has been elevated by an east and west up-throw. It is evidently of a very superior quality, containing less sulphur and more bituminous matter than most of the Mount Diablo coals. The discovery is certainly almost promising one, and well worth the attention of capitalists, whose assistance is needed for its development.

**COAL AT THE BUTTES.**—Clark, Bruce & Co. are reported to have struck a good quality of ore on the west side of the Butte mountains, near the Colusa road. The shaft which has been sunk discloses three separate veins (at or near Mount Diablo). The proprietors intend to continue work, and are sanguine of success. The coal has been tested at Marysville, and is pronounced of a superior quality.

**CARBONDALE,** according to the *Contra Costa Gazette*, is steadily improving—a number of new buildings have been erected this spring, and the place is gathering permanent population. Ben. Jones has reached the vein in his mine, and at the level struck finds the coal of fine quality.

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**O. P. Truesdell**, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 505 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.

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Never fail to stand any climate.

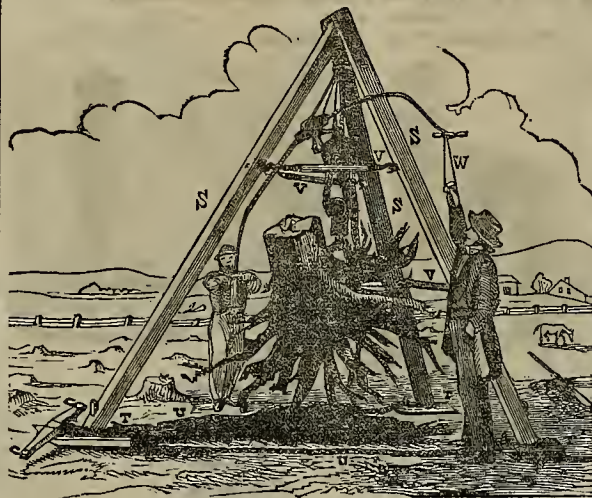
The only Perfect Pianos

They lead in all valuable improvements—all others follow.

Agents: KOHLER, CHASE & CO.,

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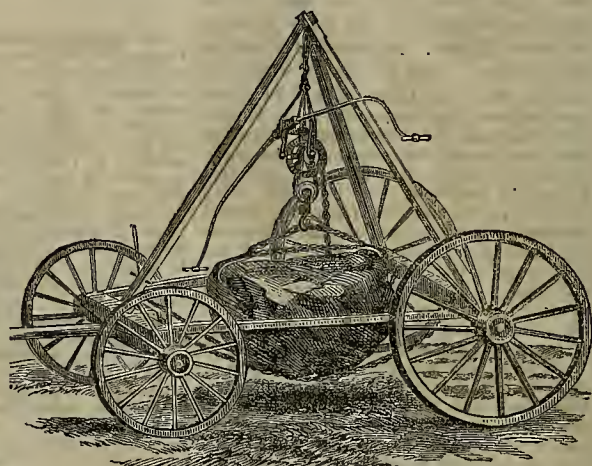
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STUMP AND SNAG PULLER.

PRICE OF MACHINES:—No. 1, 10 tons, \$200; No. 2, 15 tons, \$275; No. 3, 20 tons, \$350. Small Model Machines—weight 30 pounds—lift 1-2 to 3 tons, \$75; other sizes to order.

These Machines are adapted to all kinds of work, and where labor is scarce they are invaluable. Two men can work the machine. A few of their uses are: Loading boilers, granite, heavy ordnance in casemate, or any heavy body. For mountain teamsters they are of great value, lifting wagons, etc., clearing lands of stumps, moving boulders for miers, or for railway companies. There is scarcely any work of moving heavy bodies which they are not adapted to. Single Machines, or Right of City or County, and all information can be obtained by letter, or otherwise, by application to  
San Francisco, April 17, 1887. [16v14eowlm]



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Small Model Machines—weight 30 pounds—lift 1-2 to 3 tons, \$75; other sizes to order.

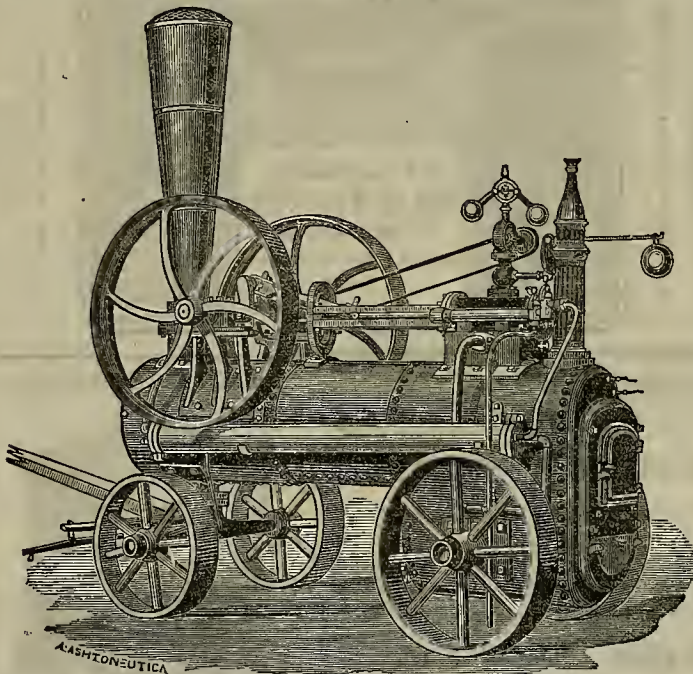
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With newly invented Water Bottom, which entirely surrounds the fire, grate and ash-pit, forming underneath the ash-pit, as up the sides of the furnace, a three or four inch water space, by which additional heating surface is obtained, the accumulation of sediment around the fire-box or furnace is entirely prevented, and renders it perfectly safe to use near any barn, or in any farm yard, or in any building where a stove would be allowed, as no sparks can possibly escape from the furnace or ash-pit. The sediment has a free passage to the bottom of the fire box, and can be blown off daily by the blow-cock and vent, the ash-pit by which means the Boilers may be kept clean much longer than under the old system. The great saving in repairs which is effected by the use of these water bottoms, and the constantly increasing demand for them, prove their superiority to any others yet constructed.

**HOADLEY'S THRASHING ENGINES.**

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**PHARMACEUTICAL AND TECHNICAL CHEMISTRY,** such as is required by Medical and Pharmaceutical Students, will be taught to such students as may require it. Laboratory open every day, except Sundays, from 8 A. M. to 5 P. M.

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**BELLS,**

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**HYDRAULIC PIPES AND NOZZLES**

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Market Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. 61f

## Foundry for Sale.

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May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 85 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address  
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LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from PANAMA for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.

On the 10th, 19th and 30th of each month that has 31 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 15th or 19th connect with French Trans-Atlantic Co's steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. R. Co's steamer for Central America.

The following steamships will be dispatched on dates as given below:

May 10th—GOLDEN CITY.....Capt. Jas. T. Watkins. Connecting with HENRY CHANCEY, Capt. Cray.

May 18th—MONTANA.....Capt. Jos. Sutton. Connecting with ARIZONA, Capt. Harris.

May 20th—SACRAMENTO.....Capt. J. M. Cavarly. Connecting with OCEAN QUEEN, Capt. Manly.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult. An experienced Surgeon on board. Medicine and attendance free.

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ROBERT S. WHIGHAM, whose name is familiar to most of the early quartz miners of Nevada county, died in New York, on the 3d of April last, of consumption, at the age of forty-five. The deceased was one of the pioneer quartz miners of Nevada county, having located a claim and erected a mill near Nevada City in 1852, on what he called the Pittsburg, but which has since been more popularly known as the "Whigham" lead. From that time to the day of his death, he has been actively engaged, with varying fortune, in developing the quartz mining interests of California, and in that portion of the neighboring State of Nevada, known as Esmeralda. Although the mine located by him proved disastrous to his fortunes, it has since so improved as to have become a most valuable property; while Mr. W. within the past two or three years has so improved his own pecuniary prospects, as to be able to leave a handsome competency for his family. We have known Mr. Whigham intimately for the last fifteen years. He leaves a large circle of friends, who knew him only to respect him, all of whom will be deeply pained to learn of his death, in the prime of manhood and in the midst of usefulness.

PRACY'S NEW MACHINE WORKS.—Mr. Geo. T. Pracy, in his new machine works, Nos. 109 and 111 Mission street, below Main, has just completed a steam engine of fifteen-horse power and eight-inch cylinder. The governor is one of the best, being of improved and simple construction. Self-acting steam piston packing, for which superior merits are claimed, has been adopted for this engine. Mr. Pracy has recently completed one of Huntington's new patent shingle machines, capable of turning out from 25,000 to 50,000 shingles per day. It is one of the simplest and best machines of this character now in use. These machines and, in short, most kinds of machinery, are manufactured by Mr. Pracy, samples of which are constantly on hand at his works.

NORTH'S SHIP YARD.—At John G. North's ship yard, on the Potrero, the steamship Orizaba has recently left the ways, where she has been undergoing a thorough repairing. About one hundred carpenters and caulkers have been at work on her. This steamship is of 1,200 tons burthen. Mr. North's facilities for repairing all kinds of vessels, except those of the largest size, are unequalled on this coast.

## Colby's Patent Compound Motion Churn.

The various forms of churns which have been from time to time devised, may be divided into four classes or divisions: First, those in which the fluid, the vessel containing it, as well as the agitators, are all in rotary motion—such churns are complicated and seldom used. Second, those in which the receptacle for the fluid is at rest while the agitator has a rectilinear, vertical action—such as the old-fashioned churn, with a common dasher to play up and down. Third, those in which the vessel is at rest and the agitators placed in a rotary motion, vortically—the manifest inferiority of action

gravity than either of the above substances; hence it so readily "rises" in the form of cream. Cream, however, contains more or less of all the other component parts of the milk. The butter with which milk is churned, nearly all of which rises with the cream, is contained in little cells or globules, the walls or envelopes of which prevent its coming together into a mass in its natural state. The first thing that is to be done in making butter, is to break these envelopes. This must be done by agitation; the moment the envelopes are broken the butter runs together in a mass. Hence the necessity for churning.

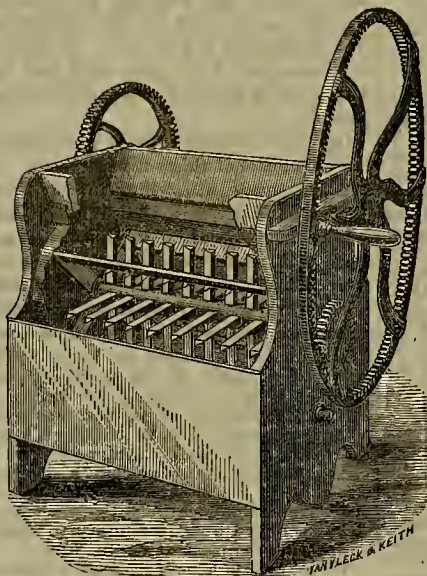
Now the most perfect churn is that which, in agitating the mass, will most effectually seek out and break up these innumerable and infinitesimally small globules. If you give the whole mass of cream a sort of rotary movement, *in bulk*, as in the first class of machines noticed at the outset of this article, there will be but a very slow *breaking up* of the butter globules. The up and down motion of the second class is better; but the cream still moves about, in large bodies, without being finely divided or pulverized, if we may use such an expression. So with those machines, of the ordinary make, of the third and fourth classes—the cream is rolled about in large masses, and the globules glide smoothly over one another (in consequence of their oily nature) without breaking.

We do not know whether Mr. Colby, in devising the churn here-with illustrated, studied into the philosophy of the work he was endeavoring to provide for, as above; but if he did not, he has been remarkably fortunate in hitting upon a device which certainly comes nearer to the work of any other inventor we know of, to what a chemist would pronounce to be necessary; but which very few chemists would have the mechanical ingenuity to devise.

By a close examination of the illustration, it will be seen that by means of two principal geared wheels working into two spur wheels (only one of the spur wheels being shown), there is a double action to the horizontal dashes; the inner one, consisting of four sets of arms radiating from a central axis, revolving one way, while the outer one, consisting of four longitudinal dashers, held in position by four arms on each terminal of the axis, revolve in an opposite direction. The complete *breaking up* of the cream by such an action must be at once apparent. Farther, on examining the radiating arms of the inner dasher, it will be seen that they have beveled faces—the bevel upon each successive series being made at an opposite angle, by means of which, in addition to the excessive agitation communicated by the double action of the dashers, additional disturbance is given to the liquid, similar to that which would be produced by a double propeller screw, set in close connection on the same shaft, with faces to propel in op-

posite directions. It would be difficult to conceive of any device for effecting a more complete and complex agitation than is thus produced. In short, Mr. Colby seems to have exactly hit the mark, and the globules of butter must be excessively fine in that cream where every one of them is not hit and broken by the action of his churn in the course of ten minutes. He assures us, in fact, that he has made butter with this machine in *five minutes*, and he *guarantees* that every one of the machines, of nine gallons capacity, worked with the ordinary speed of hand work, will make butter in *ten minutes*—that, or no sale.

This useful machine is, moreover, a California invention, for which a patent has been obtained through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. It is made and sold at from \$15 to \$40, according to size. For further particulars, inquire of O'Neil & Colby, 12 Sutter street.



of such machines renders their use very unfrequent. Fourth, those in which the vessel is at rest and the agitators in a rotary motion on a horizontal axis. Such is the class to which the machine herewith illustrated belongs. The varieties into which these four grand divisions are subdivided is almost innumerable; but we do not recollect, in all their multitude, to have met one of these useful machines which combines so many advantages as the one which we are now about to describe. In order to fully understand the advantages of this machine, it will be necessary for the reader to call to mind, for a moment,

### THE PHILOSOPHY OF BUTTER MAKING.

Milk is a compound substance, consisting of a *butyaceous* or oily matter, from which butter is derived; a caseous matter, from which cheese is formed; a saccharine matter, known as "milk sugar," which is present in the milk of all female mammals that feed upon food containing starch, but absent from the milk of all carnivorous animals which live solely upon flesh; a trace of saline matters—all the preceding being held in solution in about eighty-six per cent. of water. The total amount of *butyaceous* matter which we are now to particularly consider, varies from three to four and a half per cent. It is also of less specific

THE U. S. GRANT.—We have seen, at the office of Mr. Buffington, in the Government Building, some very fine specimens of auriferous quartz, from the U. S. Grant mine of Meadow Lake district. These specimens show a large amount of free gold, in a rock highly charged with sulphurets. Mr. Buffington also showed us some very beautiful specimens, much resembling those which are frequently found in furnaces after the fires have been suffered to go out. They present the most unmistakable evidences of the great heat to which that region has been subjected. Crystals of iron pyrites, in cubes, even half an inch in size, were shown, completely buried in a kind of slag, while the cubes themselves were scarcely changed, even on the surface; giving evidence that they had been at some considerable distance from the intensity of the heat, the molten incrustations having either fallen upon them from above, or been deposited upon them by sublimation from below. They also furnish the evidence that the fires were *subsequent* to the formation of the vein, as the crystals have been first perfectly formed—probably by aggregation—and subsequently affected by heat. A 5-stamp water mill was erected upon this mine last season, which run but a short time before winter set in. Work upon the mine, however, has been continued through the winter, and a large amount of ore has been taken out for summer crushing. The mill was to have been started the present week. This mine is worked by an incorporated company, nearly all the stock being held by those actually engaged in work upon the mine. That is the way to make a mine pay.

WAR TO THE KNIFE IN ARIZONA.—A Los Angeles telegram, May 4th, says that passengers just arrived from Prescott, report that a general war of extermination is to be waged against all Indians except Mohaves and Chimahuervis. The opinion of Gov. McCormick, long ago expressed, that it was time to put an end to all trifling with the subject, is now the opinion of Gen. Gregg, who in three recent fights, forty miles from Prescott, killed fifty-four of the redskins. The settlers are much pleased at the prospect of being ultimately freed from these savage pests.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 274.]  
UNION DISTRICT.

We are now fifty-five miles distant from Austin, in a south of southwest direction, and again in a section of country stirring with life and enterprise. Ione, the principal town in this district, is the county seat of Nye; but the late Legislature has provided for the removal of the county records, on the fifteenth of May next, to Belmont. This is eastward, over two ranges, and a more central part of the county.

The first discovery of silver in this district was by Messrs. McGee and McIntire, in the summer of 1863. This was in the vicinity of Grantsville, in the southern portion of the district. In the month of November following, the northern portion, where Ione is situated, was explored by Messrs. Haight, Carpenter and others. They were soon followed by other parties, who were rushing hither and thither over the country, from the older settlements. Early in the winter of that year, Upper Ione, containing forty or fifty houses, was rapidly built up. The site of this town is a beautiful spot, in a broad expansion of the cañon, the lower portion of which abounds with springs of most excellent water. The town was, to all appearances, completely shut in on every side by lofty pines and hills, while at the lower outlet, leading to the Sinkavata Valley below, there rises an immense quartzite bluff, with walls nearly perpendicular and sixty or seventy feet in height. Notwithstanding the many advantages and the natural beauty of the situation, this town has now gone to decay, as it was subsequently found to be too distant from the principal belt containing the mines. Three-fourths of a mile further down, where the cañon again expands sufficiently for a commodious street, with ample building room on either side, was built the present town, which contains a hundred or more houses, and which, at one time, had a population of five or six hundred, but which is somewhat less at present—Ione having furnished a large share of the population which has discovered and settled the rich districts by which it is surrounded. It was at one time on the high road to prosperity; but here again the blight following the insane policy of mill building before the mines were opened, swept over the Ionians. Their pioneer mill of ten stamps, was completed in the spring of 1865, by Messrs. Stewart & Bragg, and found the miners utterly unprepared to supply it with ore; consequently, suits and executions followed, and the mill was closed by the Sheriff, and remains so to this day. The miners became discouraged, neglecting their mines, rich as they are known to be.

"During the short period this mill was in operation, the yield from such ore as they were able to obtain was abundantly satisfactory, and gave the most positive evidence of the richness of the mines, which are situated in the hill southeast from the town. They occur in syenite, and are worked with the greatest facility; and, notwithstanding they have yielded, and six or eight of the lodes are now yielding ore that works from \$100 to \$250 per ton, not a single shaft has yet reached the water line. The Northern Star, Crown, Indianapolis, Mountain Brow and Brown lodes, are among the many that have produced ore of a high grade, and are all being worked at the present time.

Now we come to another chapter of mismanagement and folly. During the summer of 1865, the Knickerbocker mill, a fine structure, of twenty stamps, was erected by Eastern capitalists at a probable cost of over \$130,000. The mill is situated three miles

south of Ione, and equally distant from the nearest mines, the company not owning, previous to its completion, a single lode that had, or ever would, produce a ton of pay ore. This mill was completed in the spring of 1866, and is now running on such ores as it can procure from Ione, Mammoth District and Grantsville—the former three, and the latter respectively ten and seven miles distant. This is their only salvation. Owing to the high grade of ore in this vicinity, they may be able to keep on their "pins" at the cost of hauling ore that distance.

This company purchased the Great Eastern mine, Grantsville, of P. A. Haven & Co., nearly a year ago, and are now driving a tunnel to strike the lode at great depth. When completed, they expect to supply their mill from this mine alone, the surface ore having worked satisfactorily.

In the southern part of this district, also, on the western slope of the Shoshone Range, many fine lodes have been partially opened, and the indications are that when the mines of this section are in readiness for reduction works, its growth and progress will be healthy and substantial. In the summer of 1865, the machinery for a twenty-stamp mill was freighted into this vicinity; but, by the prudence and foresight of the superintendent, its construction will be delayed until their mines are sufficiently developed to guarantee a supply of ore.

Two miles north of Ione we find Agate Hill, famous for its beautiful agates. This has been called, and with some truth,

## A MOUNTAIN OF AGATES.

So abundant are they found. They occur in a belt about one hundred feet wide, crossing a ridge which slopes gently to the east and abruptly to the west, covering a space of about an acre. In places on the surface where the soft gangue has been washed away by the rains, the agates are left in great abundance, covering the ground five or six inches deep. By digging into the gangue, they are found thickly interspersed throughout.

Ten miles further north, on the west side of the range, is situated

## NORTH UNION DISTRICT.

Of the mines here but little can be said, they being entirely undeveloped. The lodes here were discovered early in the spring of 1865, and are found mostly in a gray slate formation. The characteristics of the ore, as far as can be determined at the surface, appears to be green and blue carbonate of copper; occasionally black oxide of copper and chlorido of silver. These lodes give considerable promise of eventually proving permanent and rich. The Hamilton Gold and Silver Mining Co., a Philadelphia organization, own some ten or twelve of them, and it is possible that this district may be the scene of active operations during the coming summer. The unsurpassed milling facilities and abundance of timber will aid in inducing the early development of this district.

This range of mountains is the line dividing the territory of the Shoshone Indians on the east from that of the Piutes on the west, and on ordinary occasions is considered and occupied by both as neutral ground. Neither tribe seems to make their residence here for long periods of time, merely visiting and remaining during the season for

## GATHERING PINE NUTS.

Which usually begins in September. The nuts from the "piñon," which constitutes the principal part of the timber throughout nearly the whole of Nevada, afford the Indian tribes fully one-half their sustenance. The cone that produces the nut is similar in form to others of the "conifera," and is from three to five inches in length; clustered around the center at the base of each lap or scale of the cone, are the nuts, twenty to thirty in each cone, and the trees in their bearing seasons are loaded with the latter. The Indian method of harvesting is to gather the cones into large piles, mixed with light brush and dry leaves; fire is then set to the piles, and the pitchy outside of the cone and dry brush burns readily. When sufficiently roasted, the cones burst open and the kernels are partially exposed. The pile is then spread out and thrashed until the nuts are separated; the coarser part is then raked off, and the remaining mass winnowed by the squaws until the nuts are left quite clean. The harvest is generally cached for future use near the spot where gathered. These Indian women show considerable skill in the operation of winnowing. In this, as in all else pertaining to labor, they are the sole operators. The Indians assert that the forests of each mountain bear in turns; but it is more probable that the production of the nut is biennial. I have noticed that the cone is formed and attains a considerable size the year previous to its ripening.

We have now visited all the principal

districts on the western slope of the Toiyabe Range and those of the Shoshone Mountains. Across the Sinkavata Valley, ten miles distant, we have a fine view from here of the Mammoth Range, with its subdued and symmetrical rounded peaks, black with its forests of piñon growing from the valley to the summit, and stretching north until the two ranges appear to blend, and south as far as our vision reaches.

[To be Continued.]

[Written for the Mining and Scientific Press.]

## Copper Smelting at Campo Seco.

BY W. B. WEST.

EDITORS PRESS:—In compliance with my promise, I give you a few items of my experience in copper smelting at Campo Seco. The works were projected in May, 1865, and were designed to produce matte from the poor-grade ore of the Campo Seco mine. They were finished and running by November of the same year. The improvements consisted of a railroad three-quarters of a mile long, connecting the mine with the smelting works, and delivering the ore upon platforms dug in the side of the hill for the roasting kilns, a coal house, laboratory and a large building for smelting. The latter building was forty by sixty feet, and contained two cupolas and blower. Our cupolas were of sandstone, lined with the same, or soapstone, sometimes. I did not find any great difference in the material; neither of them lasted more than twenty days. The blower was McKenzie's, driven by water power. The establishment was so arranged that the ore was continually carried down hill from the time it was hoisted from the mine until it was put into the furnaces. The slag was dumped into the Mokelumne river by wheeling it a few feet. In this way all unnecessary labor was saved, and the work done in the most economical manner possible.

Our object was not to make pure copper, but only matte of thirty-five per cent. At that time matte was selling in San Francisco at \$3.25 per unit. I therefore judged it to be more profitable to smelt once and make rich matte, than to go through the more difficult and tedious process of making copper, especially as our ore was a difficult one to treat, and I had no skilled labor. The character of the ore rendered it difficult to work alone. It was an almost pure sulphide, seldom containing five per cent. silica. The average of sulphur was from 40 to 48 per cent.; iron, 40; copper, 6 to 10. The better grades were all shipped.

Any one familiar with copper smelting can judge of the difficulty of working this ore. It was almost entirely free from silica; so I was obliged to add from fifteen to twenty per cent. pure quartz to flux the iron.

The process of roasting proved a difficult operation, the ore smelting down in the heap and forming a hard combination to smelt again. The utmost care did not prevent some from being smelted. I found the best preventive was to mix ten per cent. quartz or half-roasted ore with the heap. It is easy to give instructions for regulating the roasting of copper in heaps; but to manage an ore that contains so little gangue and so much sulphur, is no easy matter.

The ore smelted quite easy; the only trouble experienced was when the charge was too well roasted (too free from sulphur). The iron was apt to "salamander" in the furnace. The usual amount smelted per day was from eight to ten tons of 2,352 pounds per day, exclusive of fifteen to twenty per cent. flux. The average amount of coal was 250 bushels per day. Labor: two furnace men, two slag tenders, two feeders. There were other men employed getting down ore, breaking matte, and mixing the charge. In an operation like copper smelting, some reliable men are necessary, but a majority of the work can be done by Chinese. It is, however, absolutely necessary for the superintendent to know his business, and to have furnace men upon whom he can depend. It is no easy matter to run a furnace successfully; changes occur that require constant care and watching. This is especially the case where charcoal is used for fuel. It is not sufficient for him to know the requisites of a furnace only, but he should understand the metallurgy of copper.

Many changes have occurred in copper since our works were started; the price of copper has gone down to a figure that hardly

could have been predicted. The smelter should, if possible, bring his expenses to the lowest figure. I believe that even at the present price of copper in the Atlantic States and Europe, copper can be produced from sulphurets profitably—that is if the shippers do not take the lion's share.

My experience in the expenses of shipping matte lead me to believe that a smelter in California should produce only pig copper, or, perhaps, to a limited extent, for home consumption, a refined article. The expense of making pig copper will be more than counterbalanced by the extra expense of freight, sacks, and charges in San Francisco upon the matte, while the pig will be worth a greater price per unit than the matte. With proper management, a good article of copper can be made from carbonates, oxides or silicates with one smelting; but as usually conducted in this country, it contains antimony, arsenic or iron in too great quantities for general use in the arts.

The consumption of manufactured copper in California is large, and I think the day will soon come when a refinery and rolling mill will be demanded. Such an establishment should be situated near San Francisco, to catch the matte and black copper produced in the interior.

## Mountain Rice.

We made some reference a few weeks since, to a kind of wild rice, which grows luxuriantly on uplands in Northern Minnesota. Knowing that it was a valuable article of food, easily cultivated in localities, entirely different from those in which the ordinary rice of commerce is produced, we suggested that the National Agricultural Bureau should take some steps to secure its more general introduction throughout the country, as an agricultural product. We clip the following paragraph from the *Ecaminer* of this city, in relation to the same matter. The suggestions are well worth a careful consideration:

In Maryland and Virginia, a mountain rice has been cultivated, yielding, without irrigation, eighteen to twenty bushels to the acre. In Northern Minnesota it grows wild, and the quantity gathered by the Indians is estimated at over one million of dollars in value. A recent number of that valuable journal, the *MINING AND SCIENTIFIC PRESS* of our city, called the attention of the Commissioner of Agriculture to procuring varieties of the hardy species above referred to, for general distribution. Recently, an invoice of 400 barrels of rice was received in this market from Italy, and was sold at ten cents per pound. This article was raised on the plains of Piedmont, by irrigation.

That magnificent sheet of water called Clear Lake, is capable of furnishing the irrigating supply, needed by a rice crop, for a population of twenty millions. Lake Bigler has a still greater irrigating capacity, and if from any reason our agriculturists dislike to raise rice, by their own or Chinese labor, on the swamp or overflowed lands, the plains and uplands can be made available from the unfailing resources of these magnificent reservoirs.

During the past few years wheat raising has yielded a very small profit; frequently the market has been overstocked, and even now, the good prices realized, are, to a large extent, only repaying the losses of former years. We are now sending wheat and flour to New York and other ports, where they command as follows: The former five cents, the latter 7½ cents, while rice brings 10½ cents. In wheat growing our farmers must compete with the producers of the whole United States; in rice raising only with those of the Southern States. In the latter, the cotton, tobacco and sugar crops will require all the available labor of that section, thus insuring our State a more reliable crop for export, if we engage in rice cultivation, than any other staple we can raise. We have a home demand of thirty-six millions of pounds; in value, nearly two and one-half millions of dollars. We may expect an equal demand for export from the older States; or a total in value of five millions of dollars for an article that it is in our power easily to produce. Let us try.

Fossil Tusk.—Some workmen, says the *Times*, found an immense tusk, last week, while at work between Benicia and Bottle Hill. Being ignorant of its character, they destroyed nearly the whole of it. Dr. Hough, of Martinez, afterwards measured the cavity which it had occupied, and found it to have been over fourteen feet in length and fourteen inches in diameter at the root.



## Mechanical.

## Important Railroad Improvement.

The *American Gas-Light Journal* speaks of the exhibition, at the office of S. A. Beers, Consulting Engineer, 24 Pine street, New York, of an improvement in railroad construction, by which the lateral strength of the rail is brought to aid its sustaining power, and made to carry a portion of the weight of the train. This appears to be accomplished by a peculiar form or arrangement of rail templet, the practical effect of which is to throw fully thirty per cent. of the train upon the lateral strength of the rail, while the vertical strength is taxed no more than is usual—in other words, the tenacity of the rail is increased to the amount of the percentage named. The manner in which this is done is not very clearly set forth, although the advantage, as above, is fully asserted.

If this is so, it is clear that a new element of strength is brought to bear in the sustaining capacity of the rail, by which an important item of cost in railway construction may be greatly reduced. The *Journal* adds:

This principle appears to be destined to settle satisfactorily the important question of the relative economy of iron and steel for rails; as by this plan a steel rail of forty-two pounds per yard is found to be fully equal in strength to sixty pounds in the T rail, when the relative cost of the iron rail of sixty pounds and the equivalent steel rail of forty-two pounds would be as follows for one mile of single track:

24½ tons of iron at \$55.....	\$8,011
65 tons steel rail at \$12½.....	9,900
Increase in first cost.....	\$1,889

Which is less than twenty-four per cent. advance upon the cost of an iron track, which, from well authenticated experience, will outwear the iron more than ten fold.

In the State of New York, all companies organized under the general Railroad Act are prohibited from laying down any iron rail of less weight than fifty-six pounds, and as the thirty-five pounds steel rail of this pattern is amply sufficient for the use of locomotives of eighteen tons weight, it follows that a steel track can be adopted on all roads thus situated, with all its advantages, for less than ten per cent. advance above the cost of the iron track, and thereby more than double the dividends in perpetuity.

It is also evident that the power of vibration possessed by this rail upon the principle of a semi-screw, will absorb much of the strain thrown upon the equipment by oscillation, thus increasing the durability of both the train and rail.

## A WONDERFUL PIECE OF MECHANISM.—

In the Government printing office at Washington, may be seen one of the most wonderful pieces of mechanism ever devised by man. It is a Bullock Patent Printing Press, which prints in one hour 20,000 sheets of sixty-four pages of document matter; while doing this it feeds itself, the paper being in rolls, wets the paper, cuts the sheets, folds them and by a dial attached to the press keeps tally of the number of sheets printed. Of course it is an American invention.

**HOMOGENEOUS vs. FIBROUS IRON.**—When Mr. Bessemer began to manufacture wrought iron from cast by blowing air into the molten metal, it was objected to the product that it had no fiber as common puddle iron had. Experiment and practice have, however, shown that the homogeneous iron is much stronger than fibrous iron. The fiber in puddled iron is the result of intervening layers of cinder finely drawn out and preventing the lateral adhesion of the particles, which thus only adhere end to end; but the particles of homogeneous iron adhere in every direction, and hence its greater strength.

**RULE FOR LUMBERMEN.**—To determine the number of feet of one-inch boards which can be cut from a log twelve feet in length, multiply the number of inches in diameter by half that number, and to this product add two for every fifty of the same—the sum will be the number of feet of boards which can be cut from the log. If longer than twelve feet, add one-twelfth of the whole amount for each additional foot in length.

## REVERBERATORY vs. CUPOLA CASTINGS.—

It is a well known fact that cupola castings are greatly inferior in quality to those cast from reverberatory furnaces; and at Pittsburgh, where bituminous coal is cheap, the castings for machinery, when strength is required, or when strength and lightness are combined, are made only from reverberatory furnaces. Iron foundries who have the means of casting either way, are well acquainted with this fact. Re-melting charcoal iron in a cupola furnace will cause a most marked deterioration, while re-melting in a reverberatory furnace will cause a corresponding increase of strength. A recent experiment in re-melting an iron of excellent quality was found to increase in tensile strength for three re-melts, but at the fourth it began to deteriorate. The same iron, re-melted in a cupola furnace, deteriorated largely at the first re-melt.

The *United States Railroad Journal* calls the attention of railroad men to the above facts, and suggests that the practice of employing car wheels cast from cupola meltings should be dispensed with as a precautionary measure against accident. It is certainly important that none but the best car wheels should be used, for passenger trains especially. Where great speed is intended, the *Journal* suggests that none but wrought iron should be used; but as long as cast iron is at hand, to use none but the best, and those only from reverberatory meltings should be employed.

The same paper further suggests that the managing of railroads is of such serious import to the public that it is a question whether it should not be the subject of legislation, that each and every part of material used in the construction of cars and locomotives, should be inspected by a proper officer appointed for that purpose, as well as a general code for the government of all roads, and a uniform system of signals.

**MECHANICAL USES OF CASTOR OIL.**—Castor oil is said to be the best known oil to soften and redeem old leather. When boots and shoes are greased with it, they do not refuse to receive an after polishing, as when other oils are used. Leather belts for transmitting motion, if kept moist with castor oil, will last about twice as long as when greased with lard, olive or sperm oil. Belts impregnated with castor oil are not so liable to slip as when saturated with other oils. It is said that a 3½-inch belt, when castor oil is used, is equal to a 4½-inch belt when other oils are used. When castor oil is applied, a belt should not be used for at least twenty-four hours. Another advantage of castor oil arises from the fact that rats and other vermin avoid it. These facts are communicated by a practical machinist of Pittsburgh.

**A CHEAP GLASS CUTTER.**—Take an old three-cornered file, heat it red hot, and plunge it into a previously prepared mixture of equal parts of snow and salt, stirring it about so as to cool it as quickly as possible. Then grind the point on a wet stone, preserving the three sides as nearly possible; and it is ready for use. Lay the glass to be cut on a perfectly smooth surface, apply a thin flexible rule, and draw the point of the file quickly over the glass. A little practice will teach one how hard to bear on without fracturing the glass. To insure success it is needful to notch the edges of the glass at the extremities of the scratch. The file can be reground when it becomes dull. Such an instrument will be found serviceable for cutting glass for windows, and all ordinary purposes.

**TO COLOR GOLD.**—Different shades of color are given to ornaments of gold, by exposing them to chemical agents, which dissolve out a portion of the copper and silver alloy, while they have scarcely any action on the gold. The French jewelers possess a number of recipes for giving color to gold, the most common of which is a mixture of two parts niter, one part sea salt, and one of Roman alum. The jewels are kept in a solution of these chemicals, at a boiling point, from fifteen to twenty-five minutes, when they are then taken out, and washed in water, and the operation is finished. The surface of the gold is dull, but perfectly uniform, but can be made lustrous by burnishing. They lose about one-sixteenth of their weight by this operation.

## Scientific Miscellany.

## A Pest in the "Waterfall."

Science, as well as common sense, denounces the deformatory adjuncts now so generally worn by the ladies on the back of their heads. A German naturalist, Lindermann, has published an account of a newly discovered species of *entozoa*, or parasite, which often has its origin in the pediculus or common louse, and which is very often found in the modern appendage to a lady's head-dress. These minute microscopic organisms breed in great numbers on the louse, from which, on arriving at maturity, they migrate to the hair, into the cells of which they enter, and often collect in large numbers, so as to form knots. They also penetrate the tissue of the body, seeking the blood, in which they appear to thrive better than in the tissue. There is reason to believe that they multiply so rapidly in the blood-vessels as to engender serious disease, as the dropsy, asthma, etc. They also breed as parasites upon the hair, where a lack of cleanliness is common. The microscope has revealed to Lindermann as many as one thousand individuals, in their embryo condition, on one-half an inch in length of a single hair!

Numerous experiments have been made with regard to their production, which are of quite too serious a nature to be trifled with. They were found in a large proportion of this class of head gear, taken promiscuously from a fashionable hair-dressing establishment. A number of the infected hairs were placed in felt and exposed to 126° F., for six hours, when the ova showed abundant signs of life! Several hairs were secured upon the neck of a hen, a small place having been shorn of its feathers for the experiment; the hen was confined in a warm place for six hours, when the hairs were found to be covered with *entozoa*! Water heated under pressure to 360° failed to destroy them; but benzole, bi-chloride of mercury, etc., killed them.

Out of thirty samples obtained from a dealer, twenty were found infested with these parasites. Neither drying nor baking the hair destroys the ova. A heat that will destroy them also destroys the hair itself. The hair from which these filthy things are made is chiefly obtained from a thriftless, worthless class of people, who live on the banks of the river Wolga, who are but too glad to part with their hair for the smallest pittance. These experiments are considered to fully establish the fact that the ladies of European cities are wearing upon their heads, perfectly unconscious of the fact, the germs of insect life, which may at any moment spring into vitality, and communicate disease which would be difficult to eradicate, to say nothing of the feelings which, with a knowledge of these facts, must be engendered among sensitive people. Efforts have been made in certain quarters to quiet the public feeling in the matter; but the scientists emphatically assert the correctness of these examinations. Traders are forced to advertise their wares as taken from the heads of respectable people in Germany and France, and not from the filthy Burlakes of the Wolga. Who believes them?

**MUSCULAR TISSUE.**—An essay of interest to microscopists has been published by M. Rouget, in which the author describes several photographs which he has taken of magnified specimens of muscular tissue. He believes that the contractile elements of muscular fibers are disposed in coils, but that this is not the case in the smooth muscle. Much, he says, of the structural features of muscle depends on the direction in which the tissue is torn, and on the mode of preparation.

**TO DETECT WOODY FIBER IN PAPER.**—The paper is touched with ordinary strong nitric acid. If wood fiber is present the paper will be colored brown, especially on warming.

## SPECTRUM OF THE VAPOR OF WATER.—

Janssen, of Paris, has proven, by a series of experiments, that certain lines in the solar spectrum, hitherto termed "telluric rays," and attributed to the presence of water in solution in the atmosphere, are, in reality, the effect of water vapor. When light is passed through a tube filled with water under the pressure of seven atmospheres, it shows the principal telluric rays. Janssen dissents from the conclusions of Kirchhoff, who attributes a portion of the lines in question to potassium. The red and yellow being found more brilliant than the blue and violet in the spectrum of water vapor, the color of the vapor should be orange. This also accounts for the red of the rising and setting sun, or the sun when seen near the horizon.

**TO DETERMINE THE VALUE OF GLUE.**—Dr. Weidenbusch, after finding, by repeated experiments, that chemical determinations will not answer, devised a physical test, which consists in casting gypsum of the finest quality into sticks of mathematically exact dimensions by means of molds, of French chalk. These sticks are saturated with solutions of different glues, and one by one placed in a brass ring having two deep notches to receive the stick; and connected, a lever and glass or iron beaker, into which mercury is poured until the stick breaks; thus the amount of mercury used is the measure of the strength of the glue. The author has not been able to ascertain any relation between the tenacity and the specific gravity of glue. Objection may be made to this method in consequence of the difficulty of obtaining sticks of exactly the same size and saturated by the same quantity of glue; nevertheless the process is said to be more satisfactory than the common chemical process of precipitating gelatin by means of tannin.

**SULPHATE OF IRON ON VEGETATION.**—It is found that if beans are watered with a solution of sulphate of iron they will grow to double the ordinary size, and acquire a much better taste. A like effect is produced in the case of other vegetables. Water kept in a tub with a quantity of old nails in it has been found beneficial for watering purposes.

**METEOROLOGY IN FRANCE.**—The new daily journal of meteorology, now published in Paris, gives in lithograph, every day, the reports received from sixty points in Europe and two in Africa, of the atmospheric condition each morning at eight o'clock, with the addition of the state of the wind the preceding evening. These are on the first page. On the second page, on a little map of Europe, the direction of the winds at these sixty stations is indicated, and a series of lines drawn which show what were the general contours of the great vortexes by which those winds are governed. On the third page of the journal there are discussions on meteorology information. On the fourth page is a series of announcements of the various publications of the Observatory; and lastly, the acknowledgement of the several works received at the Observatory on the preceding day. The publication is a very valuable and useful one. Similar publications should be introduced into other countries.

**AN INK FOR GLASS.**—M. Kessler of France has, by means of fluor-hydrate of ammonia and hydro-chloric acid, properly thickened, made an ink, by which, with any pen, ineffaceable characters can be traced on glass. This ink will be of service to the chemist and apothecary in labeling bottles, and marking graduations on glass.

**SOLVENT FOR FIBERS.**—A solution of copper in ammonia is said to be a solvent for vegetable as well as animal fiber, such as wool and silk. It is capable of so penetrating one kind of fiber with a solution of another as to unite certain of their qualities; for example, enabling cotton to receive and retain the same dyes with woolen, and with a similar tendency.

The divisibility of copper is so great that a grain of it dissolved in an alkali will give a sensible color to 500,000 times its weight in water.

**HEAVY ORDERS FOR CANNON.**—Late English papers say that Krupp, the famous iron worker of Essen, has received orders, within a few months past, for no less than 2,370 heavy cast steel cannon.



**List of Officers of Corporations and Mining Companies.**

[Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona-fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.]

**INDEPENDENCE QUARTZ M. Co.**—May 6th. Trustees: H. F. Wood, R. C. Beatie and C. J. Klein. President, H. F. Wood; Secretary, F. G. Smith; Business Agent, C. J. Klein; Superintendent, H. F. Wood. Office, 318 California street.

**LONDON QUARTZ M. Co.**—May 4th. Trustees: M. C. Blake, Theo. E. Baugh, W. W. Wiggins, F. DeLong and H. L. Coye. President, M. C. Blake; Secretary, Jno. Crockett; Treasurer, W. W. Wiggins. Office, corner Kearny and Merchant streets.

**SALAMANDER CO.**—May 3d. Trustees: G. W. Smith, Dr. O. P. Warren, D. Ross, E. J. Pfeiffer, H. Gremke, John Speckman and Jas. McComb. President, G. W. Smith; Secretary, E. J. Pfeiffer; Treasurer, Jas. McComb. Office, 210 Post street.

**RECENT INCORPORATIONS.**

April 8th.—Pacific Tannery and Boot and Shoe Co. Place of business, San Francisco. Capital stock, \$100,000, in 1,000 shares of \$100 each. Trustees: Camillo Martin, Daniel Murphy, W. Wolf, S. Bloom and A. Alt-meyer.

May 9.—British Benevolent Society of California. Place of operation, San Francisco. Object, the relief of sick and destitute members. Directors: James Bell, Gomer Evans, Edward R. Highton, Henry Groom, Mathias Gray, Charles Pace, and John Searle.

**BUSSEY'S COMBINATION SAFE LOCK.**—We would call especial attention to the advertisement in our present issue, of this lock. We have already repeatedly noticed it, and every week adds to the number of testimonials which are confirmatory of what we have said about it. The managers of the Bank of British Columbia, after a careful comparison of this with all the other approved safe-locks, have adopted it for their vault. The funds in Amador county treasury are considered by their guardian perfectly secure behind one of them. Good mechanics and practical locksmiths testify to its strength, simplicity and reliability. Among its peculiarities may be noticed the fact that having no figures or other guiding marks upon its face, a bystander could not by any possibility divine the combination, or "set"—however closely he might watch the operator. Again, having no key-hole or other aperture which might serve for the introduction of gunpowder or other explosive, it cannot be blown open. The Sheriff of Amador county pronounces it "the nearest approach to perfection yet arrived at in the art of lock-making." In fact, it seems to be the general opinion that it is the "*Ne Plus Ultra*" of safe-locks. The term, "Burglar and Powder Proof," so often prefixed to safe locks, is, we feel assured in this case, is not a misnomer. A special premium was awarded the inventor at the State Fair of 1866. A sample of the lock can be seen at the office of Markt & Fleishel, No. 18 Post street, or at that of the MINING AND SCIENTIFIC PRESS. The inventor, Mr. W. C. Bussey, can be communicated with at the International Hotel.

**APPLICATIONS FOR PATENTS FOR MINES.** The Mariposa Gazette of May 4th, publishes in due form, notices of intention by L. L. Robinson and Hall McAllister, to apply to the U. S. for patents to the Potts mine, the Oakes & Reese, and the Jones claim, all in Mariposa county, with boundaries as per diagrams filed by them in the U. S. Land Office, Stockton.

**DR. LIVINGSTONE.**—The report of the death of this noted explorer is doubted. Sir R. Murchison has letters from Zanzibar of date two months later than the alleged murder, in which no allusion is made to it. He urges that an expedition be sent for the purpose of settling the matter.

**VIRGINIA COLLIERY EXPLOSION.**—At the New Hope pit, Clover Hill mines, Chesterfield, Va., an explosion occurred on April 4th, killing seventy men—twenty whites and fifty blacks.

**Weekly Stock Circular.**

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING, May 11, 1867.  
CITY STOCKS.

City Stocks are dull, and little or no change has taken place in quotations since our last reference. Some 250 shares of North Beach and Mission R. R. sold at \$49.50@50 per share. A few shares of Cal. Steam Nav. Co. realized 72@71 cent. Seventy shares of Spring Valley Water brought \$67.50@67 3/4 share. This company disbursed its usual monthly dividend yesterday.

**MINING SHARE MARKET.**

The Mining Stock Market continues exceedingly active, but nearly every share on the list has fluctuated materially, and, with a few exceptions, prices are lower than at the close of our last report. Many parties have realized upon their investments to take advantage of the marked improvement noted for a month past, hoping to re-purchase at lower prices. The rapid accumulation of capital in this city, and the gradually declining rates of interest, give great buoyancy to the market, and many are induced to purchase mining stocks who have heretofore kept aloof. The reports from Nevada are very encouraging, and the present large yield from the majority of the claims on the Comstock lode, give confidence to capitalists to make investments. The product of ten of these mines during the month of April amounted to about \$1,150,000—a much larger yield than for the corresponding period of last year.

**HALE & NORCROSS.**—We are informed that the ore taken from this company's mine is improving in quality, and that the average returns during the current month show a value of \$40 per ton. The new shaft, on the first instant, had attained a depth of 301 feet. This stock is firmly held, and for months past no public sales have transpired. A dividend of \$125 per foot will be paid on the 15th inst.

**SAVAGE**—continues to be well maintained, opening at \$3,250@3,200, rising to \$3,450, then selling at \$3,025, ex-dividend, and \$3,245, closing at \$3,225. The ore extracted from this company's mine during the week ending May 4th, amounted to 1,855 tons, giving an assay value of \$71,138, or \$38.35 per ton. The old works produced 69 tons; the sixth station, 137 tons; seventh station, 896 tons, and the Curtis shaft, 753 tons—315 tons of which came from the south mine. It is said that the breasts on the seventh station, both in the north and middle mine, look very well, and yield largely of about \$38 ore. Most of the present yield comes from these points. In the south mine from the second station, a winze has been commenced at a point 150 feet north of the line to connect with the next station, for the purpose of obtaining ventilation. This winze was started north of where the ore was found, and at a depth of 25 feet is said to have reached good ore. A dividend of \$150 was paid on the 8th inst. The bullion receipts in April amounted to \$337,000. They carry over a surplus of \$70,000 after paying the last dividend.

**CROWN POINT**—sold to a considerable extent at a marked decline, gradually dropping from \$1,950 to \$1,530, buyer 5, rallying to \$1,680, and closing yesterday at \$1,775. The east body of ore on the 500-foot level has been opened 25 feet north and south, and is reported to look favorable. The bullion returns of this company during the month of April amounted to \$63,971, and the expenses for the same period are stated at \$50,390. A dividend of \$80 per foot will be disbursed on the 15th inst., leaving a surplus of \$10,000.

**YELLOW JACKET**—advanced from \$1,620 to \$1,750, fell to \$1,590, improved to \$1,690, and closed at \$1,635. We learn that the east drift in the north mine was running in hard blasting rock early in the present month. On the fifth level in the north mine they are drifting south on the east body of ore, and up to the 4th inst. had

worked 80 feet south of the winze, the formation being regular and the bottom of the drift in good ore. From the April balance sheet we extract the following: March balance, \$16,694.49; yield of bullion in April, \$222,075.44; receipts from other sources, \$9,281.19—total, \$248,051.12. Expenses, \$147,455.08; balance, \$100,596.04. The liabilities are stated at \$114,989.04. Ore extracted during April, 6,894 tons; worked, 5,913 tons, showing an average yield of \$37.55 per ton. A dividend of \$50 per share was paid yesterday.

**CHOLLAR POTOSI**—has been the most active stock on the list, receding from \$650 to \$595, rallying to \$631, then selling at \$600@575, and closing at \$520. Advice to the 4th inst., state that the stope in the Blue Wing station continues in good ore. It is said that the old Santa Fé station, as they continue to breast toward the north, exhibits as good a quality of ore as formerly. Three winzes, located 50 feet apart, are now down about 60 feet—all in good ore. During the week ending May 4th, 3,755 tons of ore were sent to custom mills—the Potosi mine yielding 3,303 3/4 tons, and the new shaft 452 tons. The bullion returns for the month of April aggregate \$245,094, leaving a net profit of \$76,785. This result was obtained from the reduction of 8,540 tons of ore, showing an average of \$28.69 per ton. After paying a dividend of \$25 per share a surplus of \$31,074 will remain on hand.

**GOULD & CURRY**—advanced from \$510 to \$590.30, declined to \$572.50, and closed yesterday at \$570. This company's mill has been idle about two weeks for general clean-up and repairs, and it is expected will soon start again. We are informed that they are at present taking about 75 tons of ore per day from the upper levels. The finances of this company are said to be in a better condition than for two or three months past.

**ALPHA**—improved from \$425 to \$490, and at the close \$425 is bid. BELCHER opened at \$440@450, declined to \$370, and closed at \$430 seller 30.

**OPHIR**—exhibited considerable activity, receding from \$440 to \$415, advancing to \$455 seller 3, then selling at \$420@440, and closing at \$435. In the main south drift this company has been steadily making five feet a day, and are now in 160 feet, requiring but ten feet to reach the cross-cut west into the ledge and under the ore in the ninth station. The north drift is in 66 feet, and is said to have reached the clay of the ledge.

**IMPERIAL**—declined from \$274 to \$240, and closed at \$250 b. 10. The bullion received during the month of April aggregated \$95,162.91, and the ore extracted amounted to 4,303 tons—3,319 coming from the Alta mine, and 984 tons from the Holmes mine; amount on hand May 1st, 1,500 tons. The Imperial-Empire shaft is down 885 feet. A dividend of \$15 per share will be paid on the 15th inst. EMPIRE—sold within a range of \$190@195.

**CONFIDENCE**—realized \$67 per share early in the week, advanced to \$88, declined to \$66, and closed at \$68. The bullion returns of this company in April amounted to \$17,131.19; previous month, \$8,438.04. In April, 1866, the yield was \$18,274.86.

**GOLD HILL QUARTZ M. Co.**—During the week under review 22 shares were sold at \$165 per share. The receipts of bullion in April amounted to about \$10,000. A dividend of \$10 per share will be paid on the 13th inst.

**BULLION**—rose from \$50 to \$63, receded to \$50, and closed at \$46. An assessment of \$10 per share was levied on this stock on the 2d inst. OVERMAN, under large sales, declined from \$50 to \$44, and closed at \$47. SIERRA NEVADA sold at \$12.50@15. EXCHEQUER at \$10@12.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,831,325.

**THE SUTRO TUNNEL.**—It will be recollected that the capitalists of New York have promised that as soon as California capitalists shall raise \$500,000, to add to that amount \$4,500,000, to make up the five millions required to put this great work through. Up to the present time \$365,000 have been subscribed, as follows: The Savage company, \$150,000; Gould & Curry, \$100,000; Hale & Norcross, \$100,000; Empire, \$15,000. The New Yorkers, and other friends of the tunnel, are now waiting for Yellow Jacket, Crown Point, Chollar-Potosi, Ophir, Mexican, and other companies. Only \$135,000 more is wanted to ensure the execution of this great enterprise. It is to be hoped that the amount will soon be forthcoming, to the end that the work may be pushed forward with all possible dispatch.

**New Patents and Inventions.**

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the list of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

**PATENTS RECENTLY ISSUED.**

33,218.—METHOD OF OPERATING RAILROAD SWITCHES.—Gilbert M. Cole, Folsom City, Cal.:

I claim, 1st, The mechanism, herein described, for rendering a railroad switch absolutely self-adjusting as the train approaches it on either branch of the double track, in combination with the mechanism herein described, by which the engineer can render the switch self-adjusting as the train approaches in an opposite direction.

2d, The levers, b, b', the pinion, a\*, the sector, d, shaft, c, and crank, c', in combination with the levers, a, a', pinion, a, sector, d, and the loose wheel, b\*, on the shaft of the locomotive truck, all constructed, arranged, and operating substantially as described.

33,365.—APPARATUS FOR CONCENTRATING AND CONDENSING VOLATILE METALLIC SUBSTANCES.—Joseph C. Coult, San Francisco, Cal.:

I claim, 1st, The arrangement of the furnace having fire on two sides, and the openings leading to the ore-chamber, substantially as described and for the purposes set forth.

2d, The soot and spark chamber and the dry compartments, having a continuous supply of cold water surrounding them to hasten condensation and concentration of volatile mineral substances as described, substantially as and for the purpose set forth.

3d, The combined arrangement broadly, as an improvement upon the Coult & Roach concentrator and condenser for the reduction of quicksilver, ores, and the use of steam or water to produce draught to accomplish all substantially in the specification described and for the purposes therein set forth.

63,424.—COMBINED PLANTER AND CULTIVATOR.—Ansel Wallace Putnam, Suisun, Cal.:

I claim, 1st, The apparatus for furrowing for and covering the seed, consisting of the marker, S, the diverging plates, T, T, and the converging plates, V, V, combined and arranged substantially as described.

2d, The wheel, D, and bent arm, E, together with the sliding-plates, L, L', and the regulating slide, P, for dropping the seed, constructed and operated substantially as described.

3d, The rocking-chair attached to the frame and the hinged arms, h, h, for the purpose of raising and lowering the frame, substantially as described.

The object of this invention is to provide an improved planter and cultivator, so constructed as to plant with great regularity and dispatch. By its use a furrow for the seed is made, the seed dropped and covered. The machine is so constructed that the marker can be made to run lightly over the ground or caused to enter it more deeply, as the driver throws his weight forward of the axle or behind it; or the marker can be raised and secured, so that it will not touch the ground. The planting mechanism may also be thrown out of place, at will, so that the machine may be the more readily transported from place to place.

**Allen's Lung Balsam.**

Remarkable cure of the daughter of Robert Lawrence, Esq.:

Newport, R.I., June 1, 1863.—Gentle:—I will give you a statement of the wonderful medicinal properties of ALLEN'S LUNG BALSAM. My daughter was attacked with a cold, which settled on her lungs. A severe cough was the consequence, which so harassed her that she became much reduced. She had great pains in her side and breast, attended with cold chills and night sweats. She raised mucus from a pint of matter a day. Finally her lungs became ulcerated, her hands and feet were cold and clammy as death. Her physician, having failed to give any permanent relief, said that he could not do anything more for her; that she must soon die. At this time I procured Allen's Lung Balsam, which caused her to raise large quantities of matter and phlegm. When this was expectorated, her appetite and strength gained rapidly, and her cough in a short time ceased, and now she is as usual. It is a wonderful trophy of the medicinal properties of Allen's Lung Balsam.

Respectfully yours, ROBERT LAWRENCE. Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.

Sold by all Medicine Dealers everywhere. 18x14-1m

**Perry Davis' Vegetable Pain Killer,**

After a thorough trial, by innumerable living witnesses, has proved itself the Medicine of the age. Although there have been many medicinal preparations brought before the public since the first introduction of Perry Davis' Vegetable Pain Killer, and large amounts expended in their introduction, the Pain Killer has retained its superiority. The effect in the estimation of the world as the best Family Medicine ever introduced. It is an internal and external remedy. The positive proof of its efficacy, is that the sales have constantly increased, and upon its own merits. The effect of the Pain Killer upon the patient, when taken internally in cases of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the system, has been truly wonderful, and has won for it a name among medical preparations that can never be forgotten. Its success in removing pain, as an external remedy in cases of Burns, Bruises, Sores, Sprains, Cuts, stings of Insects, and other causes of suffering, has secured for it such a host of testimony, as an almost infallible remedy, that it will be handed down to posterity as one of the greatest medical discoveries of the nineteenth century.

Sold by all Medicine Dealers everywhere. 18x14-1m







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Alpine Miner* of May 4th: We learn that no difficulty was experienced in working the Tarshish ore at the Ophir mill. Eighty-eight per cent. of the fire assay was the result. The 3½ tons worked \$1,203, instead of \$1,050, as at first reported by telegraph. All Alpine is delighted.

The Pittsburg Co. have let a contract on their tunnel for 100 ft., and will prosecute the work with vigor to the opening of a payable ledge. This company purchased and located six parallel lodes crossing the head of Scandinavian Cañon, last year.

We notice this week that work is being done on the Slate lode, the Home Stake tunnel, the Arizona claim, the Ringold & Goldfinch tunnel, and the Diamond lode, now locations, and the Sam Booth, Mowyer and Evening Star, old claims. The Schenectady Co. are still at work on their ore house.

## Calaveras County.

From the *Copperopolis Courier* of May 4th: The new ditch from the Big Reservoir, Salt Spring Valley to Quail Hill, is to be completed within 60 days.

The *Chronicle* speaks of a 14-oz. nugget found a short time since in the vicinity of Mokelumne Hill.

The *San Andreas Register* says: Everybody has "Cat Camp" on the brain.

## El Dorado County.

From the *Placerville Courier* of May 4th: From all quarters we get cheering news with regard to prospecting for gold. At Georgetown, this season, there will be a vast amount of work done with certain reward—for the work already done reveals the fact that the mines are rich in gold. In this vicinity, a great amount of work is being done. Although there is no excitement about mining, yet there is sufficient proof to convince us that there is no end to the mineral wealth that only awaits the stroke of intelligent industry. Capital is coming forward to assist in prospecting the mines; mills are being built; every day there are discoveries that if made in some remote region, like Montana, would draw thousands.

The Nevada mine is about half a mile from the Shepherd, and supposed to be on the same lead, in Poverty Point District. Messrs. Noyes & Clark have one shaft down 30 ft. on a ledge 4 ft. wide, which prospects very rich. They have another shaft of 40 ft., which they were obliged to abandon, on account of water, a short time since.

From the *Democrat* of same date: We were shown, a few days since, 200 ozs. of gold dust, well retorted, taken from the claim of Messrs. Norton & Stillwagon, at Brownsville, in this county, the result of 29 days' run of a 5-stamp mill. George W. Swan & Co.'s is another of the promising Brownsville claims.

## Fresno County.

A letter from Buchanan Hollow to the *Mariposa Mail* of May 4th, says: The Buchanan copper mine is in successful operation. The greatest depth sunk is 146 feet, and the vein is about seven feet thick, and well-defined. Other companies are expected to commence operations soon. A sale of interest in the Buchanan has recently been effected for a large sum. At James' Ranch the Green Mountain Co. have taken out considerable ore from their vein; their smelting works will soon start and rich results are anticipated. The German Co., which claims 4,250 ft. of the northwesterly extension of the Buchanan lode, are to hold a meeting on Monday, May 6th, for the purpose of commencing work on their claim.

Letter from Millerton to the *Visalia Delta* of May 1st: Some important discoveries of placer diggings have been made on Franchio Creek, where as high as \$15 to the hand is realized. Some 40 claims are already staked off. Other diggings are paying from \$4 to \$10 per day.

## Kern County.

From the *Havilah Courier* of April 27th: Williams, Rogers & Co., Dahlonga Dist., are down 50 ft. in their second shaft on the Rupert lode, which is from six to seven ft. wide. The Bob lode is also showing well, and all the mines in this district are increasing in size and richness. Davis & Co.'s mill will be running in two weeks.

## Mono County.

A correspondent of the *Sacramento Union* writes: There will be perhaps 100 tons of first-class ore shipped from here this spring to San Francisco that will pay from \$800 to \$1,200 per ton. Dr. Partz, of the Cornucopia Co., has just shipped to San Francisco, by the way of Aurora, Nev., 9,273 lbs. of bullion, which was realized out of about 20 tons of ore.

## Nevada County.

From the *Transcript* of May 2d: The one-fifth interest in the claim of Mull, Evans & Co., which was sold a few days since for \$10,000, could not now be bought for \$15,000. A very rich strike has been made in the claim since the purchase.

From same of 7th: At the bottom of the incline, 200 ft. below the surface, in the Cunningham mine, very rich rock has been found. Last week, 16 lbs. of this quartz, worked by mill process, yielded \$2. Men are engaged in drifting in the upper and lower level of the mine, and all the rock taken out is of excellent grade.

Same of 8th: The Russian mine on Manzanita Hill, Bridgeport township, is owned by three men, and five hands are employed in working it. At the last clean-up, after a four week's run, they got \$1,900, giving a dividend of \$300 to each of the owners, after paying expenses.

The English Co., at Badger Hill, near Cherokee, are washing on the blue gravel channel. They employ 20 men, and at the last clean-up averaged a profit of \$5 per day to the man.

The French Co., at North Bloomfield, is working 22 men. After a run of five weeks they took out \$7,100.

From the *Gazette* of May 3d: The flume claims in Little Deer Creek are now owned by W. K. and A. G. Farnham, H. W. Butterfield and Chas. McElvey, who are taking out from \$100 to \$300 a day—the yield last Tuesday reaching the latter figure.

Same of 4th: The Hope Gravel Co., working the gravel claims at Alta Hill, has leased the Larimer mill, to crush their cement.

The mill of Black & Young is the only one in Eureka township, which has been kept running with any regularity during the winter. The Eagle Co.'s mill will start on Tuesday.

Same of 6th: Messrs. Evans, Stidger & Co., owners of the claims on Buckeye Hill, near Sweetland, cleaned up last week, and took out \$19,650.

Same of 7th: Kevelin, Burke & Co., recently commenced the work of developing the Vanderbilt ledge. They have an incline down about 25 ft., disclosing a well defined ledge of 12 to 15 in. in width.

From the *Grass Valley Union* of May 1st: The prospects of the Consolidated mine are daily brightening. Two men took out five tons of quartz on Monday. A 10-stamp mill will probably be running within the next six weeks.

Same of 2d: Pumping and hoisting machinery is to be at once erected on the Home-bound mine. The engine will be of 30-horse power. A new incline will be sunk.

The Union Jack rock, now being crushed at the Ione mill, is giving an average yield of \$14 per ton.

Machinery will be placed upon the La Crosse mine in a few weeks.

EXCELSIOR.—From the *Transcript* of May 5th: The snow is melting rapidly at Meadow Lake, and at last report was only 9 ft. deep. The Mohawk, Grant, Golden Eagle and California mines are all being worked with energy. The Grant mill is crushing, and the Golden Eagle will start up in about ten days. The California has been worked by shaft from 90 to 100 ft. At this depth the ledge is 9 ft. wide, with clearly defined walls, and the rock assays \$170 to the ton. The first of June will be early enough for those who desire to examine the mines to visit the district.

A letter from Judge Tilford to the *Enterprise* says: The Golden Eagle rock looks splendidly. The ledge on the Knickerbocker lode is more than 8 ft. wide at the depth of 80 ft. The California mill will start shortly. The Excelsior Co. resume work in May, and are confident of success. The Mohawk and Montreal shaft has exposed a ledge more than two feet wide of excellent ore, at a depth of 250 ft. below the apex. The mill has not been injured by the winter storms; the machinery is all housed, and milling will commence very shortly. The Gold Run Phoenix is now and has been at work on its tunnel through the past season. The ore is looking really rich. An assessment of \$1 per share was levied a few days since. The Comet Co., Shooting Star ledge, are preparing for work. The Grant is crushing rock that yields from \$40 to \$50 per ton. The Kentucky claim prospects finely. The Enterprise Co. are getting ready to put up new machinery, and are sanguine of success.

## Plumas County.

From the *Herald* of May 4th: No crushing will be done for some weeks in the Harpending mine, as the mill is to be removed to a more eligible position lower down the hill.

A difference of opinion seems to be expressed in regard to the Green Emigrant. A positive friend of ours who has lately visited it, declares it "the richest thing in the State."

The Nevada *Transcript* says a largo force of men is still employed on the Harpending in taking out ore.

Colfax letter, May 3d, to the *Dutch Flat Enquirer*, says: The Rising Sun Co. will soon commence operations on a large scale, and it is said that the old Live Oak has changed hands and that extensive works will be erected by the new company this season. \* \* \* Placer mining has about ceased. Walker & Co. are yet making about one oz. a day, but their water is rapidly falling.

## Plumas County.

From the *National* of April 27th: The Greenville ditch is now near completion, and we may expect to have large shipments of gold from Indian Valley. The new diggings are of great extent, and prospects 25 cts. to the pan. There will be employment for at least 200 miners the coming season. Mr. Westcott, who represents a New York Co., will commence operations on the Kitts' mine immediately. He has engaged one of H. C. Bidwell's mills for the time being. We were lately shown at the office of the Caledonia Co., some of the richest quartz rock ever produced in this county. The mine is wide. The mill gives fine results. Mr. Aschheim has sold his third of the Lone Star quartz mill to H. C. Bidwell.

## Shasta County.

From the *Courier* of May 4th: The Mammoth Co. have decided to remove the mill to the Harrison lode without delay.

Dosh & Jollie will commence a run on rock taken from the Jollie lode, on Monday next. The quartz selected prospects very rich.

The Potosi Co., at Muletown, have discharged their superintendent and most of the workmen, and will hereafter work the claim on a more economical plan.

Peck's quartz mill will soon be removed from Copper City to the Pacific claim, at South Fork.

The reports from South Fork mines are all encouraging. Work is being pushed rapidly ahead on the Chicago, Crystal and other claims. The Chicago has commenced sending ore to San Francisco via Red Bluff.

## Sierra County.

From the *Downville Messenger* of May 4th: The Boot Jack claims, located on Gishon Creek, formerly known as the Snyder claims, are turning out immensely rich, gold in large quantities being visible in the dirt. The claims are owned by Barret, Welch & Co.

Letter to same from Morristown: Our ditches are running full of water, and mining has commenced in real earnest. The American Co. has had considerable trouble with its ditch, but no serious breaks. The American Co. is working about 40 hands, with some room for more, but it has made no clean-up. Parish & Co., of the Union & McGee Co., are removing the snow from their diggings.

## Tuolumne County.

From the *Columbia Citizen* of May 4th: Among the claims now being worked at Knapp's Ranch, are those of Peabody & Arnold; Morrison & Sullivan; Hunt & Ryan; (formerly the Black claim); Hagarty & Wolf; D. Coffron; and Burgel & Co.

At Yankee Hill, there are some 14 claims which are paying fair wages, and some of them, perhaps, a little more.

The Shanghai quartz claim, in this precinct, employs 15 hands—has a 10-stamp mill—and is considered one of the best claims in this vicinity.

## Yuba County.

From the *Appeal* of May 3d: Our Brownsville correspondent writes May 2d: Confidence is reviving every day. The Sweet Vengeance is preparing for a new start. The Rattlesnake (old Yuba) resumed work a week ago, and things look encouraging. The Dannebroge is repairing their machinery. The Pennsylvania has a full supply of good quartz for their 16 stamps. The Jefferson machinery will be repaired to-day, and it will soon start its twelve stamps on good quartz. At the bottom of its shaft, at a depth of 550 ft., is now found very coarse gold, and within the last few days a great many pieces of pure gold, some of them worth from \$4 to \$6, have been picked up.

Camptonville letter to same: B. P. Hugg cleaned up a portion of his sluice, the other day, and realized \$1,500. Clow & Hendricks have sold their entire interest in Brandy creek to a company of Chinamen for \$4,500. The Nevada Co., at Garden Valley, has this winter had two dams swept away and their claim covered with tailings; but the claim is again working.

## ARIZONA.

The *Bulletin* has a letter from Wickenburg, dated April 4th, from which we quote: The new 20-stamp mill of the Vulture Co. has just been completed upon the Hassayampa, half a mile north of this town. It

is a fine large adobe building. The engine (50-horse power), boiler, stamps, and, in fact, all of the machinery of the new mill, were manufactured by the Union Works of San Francisco, and are a complete success. The whole twenty stamps commenced working yesterday, without a single fault or breakage, and a new Blake's crusher will go into operation before the close of next week. The ten stamps hitherto worked crushed eighteen tons per day, averaging a yield of \$50 a ton, the surface and shaft ore proving equally good.

It is expected that the 20 stamps will crush 40 tons per day, turning out \$2,000 every 24 hours. Thus far, no sulphurets or refractory ores of any kind have been discovered. Jagar & Co., of Fort Yuma, have now a contract for transporting the ore from the mine to the mill, over a new road 14 miles in length, at about \$10 a ton. The cost of extracting the ore from the mine is about \$5 per ton. Wood is furnished at the mill at from \$5 to \$7 per cord. At the mine I found 2,000 tons of ore awaiting transportation. Twenty odd men are constantly employed at the mine.

## BRITISH COLUMBIA.

From the *Cariboo Sentinel* of March 30th: The greater number of claims would have been working before this but for the want of water, which a continuance of this fine weather will soon supply. The mining season of 1867 gives promise of being the most interesting and prosperous that has yet been experienced in Cariboo.

In Stout's Gulch, the Alturas Co. are running a tunnel, working 12 men; they took \$640 out of the dirt from two small sets of timbers, they are now sinking a shaft to the main tunnel. Jenkins Co. worked all winter; in running a side drift they found a prospect of \$17 to the pan. Muchoro Co.'s ground pays \$40 per day to the hand; they are waiting for water. The Home Ticket, in Conklin's Gulch, has struck fine prospects.

In Grouse Creek, the Heron Co. paid \$800 dividend to the interest last week. The Black Hawk Co. expect to be taking out pay in a short time. The Full Rigg Co. paid \$200 dividend to the interest last week. Several new claims have been taken up on this creek since the Bed Rock Flume Co.'s charter has been revoked.

The Blythe Co. on Lightning Creek are preparing to take out pay. The Burns Co. on Burns Creek, are waiting for water.

On Cañon Creek, the Stewart Quartz Co. have quit working. The Washburn Co. sunk a shaft 62 ft. deep on their ledge, and found some of the richest quartz that has ever been seen in this district. Two arrastres will be erected.

## COLORADO.

From the *Denver News* of April 17th: Mr. Banks, of Nevada, has discovered a valuable lode of gray copper, rich in silver, near Mount Vernon.

We learn from private sources that the Grass Valley Hydraulic and Mining Co., are about to resume operations in Clear Creek county. Some competent engineers, experienced in this kind of mining have lately examined it and pronounced it one of the richest placer regions in the world. We have thousands of acres scattered through every valley in the mountains which will produce from \$2 to \$5 in gold per day, per man, when properly worked. The money which developed the Bobtail, Gregory, Gunnel, Burroughs, Missouri, Bates and other prominent ledges in Gilpin and Clear Creek counties, came from these now neglected mines; and we will welcome again the day when the long tom, sluice box and rocker are again in use.

Mr. L. C. Shields has just returned from a trip into Snake River and Peru Mining Districts. All the mining camps are deserted, and in the valley of the Snake the snow is about five feet deep.

## IDAHO.

From the *Owyhee Avalanche* of April 20th: The Oro Fino and Morning Star Co., and the Sands Co. have completed a contract of consolidation for mining purposes on the Oro Fino mine. During next week some preliminary labor will be done about the works, so as to have everything in order to put on a force of miners to take out ore by May 1st.

Reports from Lemhi are "mixed." An extract from a letter to Geo. Knowlton, dated Leesburg, March 10th, is as follows: It has snowed here most of the time since October. \* \* \* As for the mines—my opinion is, that many a man will curse the country. For my part, I shall get out of here as soon as I can get a horse and a little grub. A color of gold sets these pilgrims crazy. Chit. Davis and another man have been prospecting for two months, and have not been able to raise a cent to the pan yet; and I will bet they have sunk 50 holes in different places. From same of 27th: It is understood that



a force of men will be put at work on the Oro Fine next Monday.

Frank Almon and partner have struck a ledge between the Woodstock and Hays & Ray.

Whisky ledge has been opened in a new place east of the Miner mill, and a vein of two feet of good looking quartz found.

Several companies of Chinamen are at work in Flint Gulch.

An opening of 20 ft. in length on the Silver Cord, shows a large belt of very rich ore. The Vulcan still presents encouraging features. The Hays & Ray tunnel is going Poormanwards quite rapidly. But little blasting is necessary. The workmen are now nearly 650 ft. from the mouth of the tunnel. The ore is improving in quality as the work advances. The vein is perfect. The main shaft on the old Poorman works has been started down to strike the tunnel 250 ft. below. The shaft on the New York will reach the depth of 80 ft. in the course of the week.

From the Boise City *Statesman* of April 11th: In Cottonwood Gulch, above the Garrison, two men in four days last week, washed out \$76. It is believed that another year these mines will justify the bringing a ditch from Boise river. The gold is equal in quality to the Placerville dust.

From the Silver City *Bullion*: The new tunnel in the Hays and Ray claim, an extension of the Poorman, has been pierced to 600 ft. in depth, and fabulously rich ore has been struck.

From the Idaho City *World* of April 20th: Active mining operations were commenced on Moore's and Elk creeks, and on Bonum Hill, opposite this city, early in the week, and in some of the hill claims the work is prosecuted night and day, with hydraulic force. In a week or two more the mines in every portion of the Basin will be ready to work. This year some placers will be worked for the first time with water from newly made ditches. There are vast tracts all over the Basin which have never been prospected, but which will doubtless prove as rich as any of the diggings about here.

Work has commenced at Pioneer. By next week nearly all will be busy. A very rich vein has been struck in the Elkhorn mine, from which about 200 tons of fine ore is already taken out. The mill has been crnshing for a week or more, and a big clean up is expected.

A letter dated Rocky Bar, April 12th, mentions the discovery of another vein in the Bonaparte Hill mine, from which some very rich ore has been taken. A very prosperous mining season generally in that district is anticipated.

Gold Hill Dist., 25 miles from this city on the other side of the divide which hems in this Basin, and the adjacent district, of which Banner City is the camp, promise to be of much importance during the season just opening. Dooley's ditch, from Crooked river is completed.

Letter from Leesburg, dated March 25th, says: Mining has not commenced here yet, and things do not look much like it, the weather being very cold and snow very deep.

#### MONTANA.

From the *Post* of April 20th: Mining matters are looking up on Confederate Gulch. Hillis & Co. have been taking some rich pay dirt out of their claim, at the mouth of Montana Gulch, taking out from \$95 to \$188 to the pan. They found one nugget weighing \$312. A nugget weighing \$100, was taken out of Boulder last week. Williams & Co. have found some very rich paying ground in their claims adjoining. They are engaged in erecting a derick. Aht & Co., next below, have been on good pay ever since last July. McCarty & Co., first claim above discovery, feel confident that their ground is good. Mayor Shoup, at Red Mountain, will have his mill in running order on May 1st. Harvey & Co. have made a rich quartz discovery on Coolie's Gulch.

Messrs. Fisher and Postlewait have leased the Excelsior mill, and will have it running by May 1st on rock from No. 1 on the Kearsarge.

The 15 600-lb. stamp of the Hawkeye mill are all at work on Kearsarge rock, which yields on an average, \$30 per ton. The cost of working it, including the mining, is \$7 per ton.

Work on Last Chance and adjacent gulches is slowly getting under way. The Christenot mill sent in yesterday, 60 ozs. of retort. Col. Postlewait deposited some 50 ozs. from the Hawkeye. The former is still short of water, and the latter working from top rock.

Messrs. Nowlan & Weary have received in bank 400 lbs. of bullion slabs from the last cupellation of the Legal Tender ore. As an evidence of the richness of the rock, we may state that the St. Louis and Montana Mining Co. offered Mr. Esler \$50,000 for 50 tons of the rock. This is \$600 per ton in gold.

At Red Mountain, Highland, the Ballarat ranks first among the ledges. The quartz is decomposed, yields by assay \$141.50 per ton, and has, at a depth of 50 ft., a 28-ft. crevice. The Nevins lode, southwest, is very rich, \$25 per day having been made by crnshing with a hand mortar. There is on it a 40-ft. shaft, showing four feet of crevice.

The mill of the Ragland & Cope Co., at Hot Springs, is crnshing 20 tons daily from the Gold Hill lode. The leads of the company are developed as follows: Poney Discovery—shaft, 135 ft.; crevice, three feet; yield, \$85. Gold Hill—shaft, 60 ft.; crevice, three ft.; yield \$40. Asop—shaft, 30 ft.; crevice, five ft.; yield, \$30. Excellence—shaft, 20 ft.; crevice, 2½ ft.; yield \$50. Oriental—shaft, 60 ft.; crevice, six inches; yield, \$40. Oriental Extension—shaft, 25 ft.; crevice, three ft.; yield, \$40.

From the Helena *Gazette* of April 13th: Things are lively in Washington Gulch. The latest reports from Engle Creek are encouraging. From several of the shafts sunk on the streak where they have again struck pay below the rich deposit first worked out in Montana Gulch, as high as \$100 to the pan has been obtained.

From Lost Horse reports are most encouraging. The miners are making preparations for early operations.

#### NEVADA.

##### Black Rock.

The Susanville *Sage Brush* of April 13th, says: We have just received the result of a number of tests of Black Rock ore, made for the Chico Co., by Mr. Charles Insensbeck. The Emerald ledge, which he describes as Plata Verde, or green silver ore, yielded at the rate of \$238 per ton. From a piece taken from the wax deposit on the Buokeye, which he calls chlorido or horn silver, he obtained the enormous result of \$9,329 per ton. He made a second test which varied but little from the first.

##### Esmeralda.

From the Aurora *Union* of April 27th: On Last Chance Hill, Mr. Arnold took out four tons of ore, which produced 320 ozs. of bullion. Eighty ozs., the battery bullion, have been assayed, giving an assay of \$10.25 per ounce.

Six hundred and fifty pounds of bullion from the Rockingham claim, at Hot Springs, was brought as far as the race course by Mr. Hanson, when he was compelled to abandon his conveyance on account of the snow. He chartered a train of Pintos to bring in the treasure. From Mr. Hanson we learn that from a chamber in the mine 30 ft. long, from three to ten ft. wide, there has been near \$10,000 worth of ore taken out in the last few months, and the mine is now looking well. The Cornucopia and other mines in the immediate vicinity all look well.

From the Gold Hill *News* of April 29th: The discoveries in Washington Dist. are becoming excitingly rich. We have before us two assays made by Edwards & Wiegand, of ore from two different ledges in that district; one is from the Mary Ann ledge, and contained \$905 in gold and \$174.75 in silver—total \$1,083 per ton of ore. Another assay, from an adjoining ledge, yielded in silver at the rate of \$578.80 per ton.

From the *Enterprise* of May 4th: Eighteen tons of Midas ore, Pine Grove, worked at Wheeler & Penrod's arastra mill, yielded \$710, or nearly \$40 per ton. The lead is about four feet wide at the point where it is being worked. The Grand Deposit is in the same vicinity and near the Imperial. A lot of 4,700 lbs. of surface rock from it, worked at the same mill, yielded \$157.59.

##### Humboldt.

From the *Register* of April 27th: In the North Star mine, great progress has been made in the last two months. The shaft shows an exceedingly fine and rich vein of silver ore. The tunnel now being run will cut the vein some 250 ft. below the surface.

One year ago last fall work was commenced on the Bullion, and a tunnel run in 100 ft. From the end of this tunnel a drift was run 40 ft., and the ledge not being found, work was suspended, and the mine has since been idle. By another season the railroad will be completed to within five miles of the mine, when we may expect to hear of the Bullion being added to the list of producing mines of Humboldt. The stock of the company is chiefly owned in the East, and but few of the stockholders have any correct idea of the value of the property they own.

The old Star City mill is being torn down and moved to the new site. Additional machinery is to be purchased at once and erected without delay.

The Montezuma Smelting Works are in operation in all departments, smelting, calcining and refining. Thirteen tons of ore are consumed daily, yielding over 60 per cent. crude bullion, which goes into the refining furnaces. Over 100 tons of bullion

have already accumulated. We understand the castings for additional refining furnaces have left Cisco, and will be there next week. A fire occurred at the mine last week, destroying the Montezuma house and all its contents. The house is to be rebuilt at once.

Considerable excitement has prevailed in Star City, during the past week, on account of the discovery of gold, in considerable quantities, in the bank of Star creek, at the foot of the Yankee hill.

Same of May 4th: The Montezuma mine, Arabia Dist., yielded during April over 300 tons of ore, all of which has been reduced at the smelting works of the company at Oreana. The ledge shows a solid body of ore from wall to wall, 18 ft. in width, and not a pound of waste rock. The company has only one set of furnaces in operation, which produced during the month of April over 200 tons of metal, in value over \$35,000.

Mr. Torrey will, we understand, be ready to fire up his furnaces in the course of 10 days. He has some \$150,000 worth of ore in sight.

The Nevada Silver Mining Co., in Arabia Dist., has leased its mill to parties from Gold Hill, who are opening the Chloride ledge, a short distance north of the Montezuma. Assays from this mine have yielded over \$500 per ton.

The Trinity & Sacramento Co., at Oreana, shipped this week 847 ozs. of bullion, valued at \$1,016.

##### Pahranaagat.

From the *Reveille* of April 29th: A Pahranaagat letter, dated 17th, says: The Illinois is, beyond a doubt, a superior lode; there is plenty of \$120 ore in a wide vein. A number of companies have been organized for operations here. The Pioneer and the Crescent Co's have each a 5-stamp mill. The Pahranaagat Valley Co. has a 10-stamper on the ground. The Montauk Co. has expended some \$18,000, and is now at work on the Ocean lode. It erected a furnace and tried to smelt the ores, but it proved a failure and was abandoned. Two English companies are organized, and will commence soon to develop their lodes.

##### Reese River.

From the *Reveille* of April 27th: W. G. Blakeley's 5-stamp mill, in Reveille Dist., has been running for several days with success. Ore from the Mohawk and Green Mountain locations, belonging to the mill company, although the pulp was not tested, is estimated to have yielded at the rate of \$240 per ton. The Bullion Co. is working several of its ledges, and its Fisherman claim is producing ore of marvelous richness.

From same of 29th: A thousand pounds of ore from the Amazon yielded in the Keystone mill at the rate of \$274 per ton. The ledge is 15 ft. wide.

The Fisher ledge, in Milk Springs Dist., shows beautiful mineral at the depth of 10 ft. The stage on Saturday brought \$5,087.57 bullion from the mill of the Belmont Co.

There arrived yesterday 3,367 ounces of crude bullion from the mill of the Social and Steptoe Co., Egan Cañon.

From the Silver Bend *Reporter* of April 27th: The Rutland mill, in Reveille Dist., is producing bullion at an astonishing rate. Most of it, about 1,000 ozs., has been forwarded to Austin; but Mr. Nelson brought a little to this place (Belmont) on horseback. It produced a bar weighing 66½ ozs., 947 fine, and containing \$80.99 in silver and \$4.16 in gold.

The Holland ledge, in Manhattan Dist., is 25 ft. wide upon the croppings, and assays \$265.35 in silver to the ton. The Great Western is from 40 to 50 ft. wide, and assays \$174.23. Both of these ledges have an enormous quantity of surface ore in sight that will pay for milling. They are situated about 20 miles from Belmont.

The Ophir assays \$263 in silver and \$3 in gold to the ton.

The Great Salt Basin Co., at Silver Peak and Red Mountain, has without doubt the finest mining property owned by any single corporation in the world. It comprises a series of magnificent silver-bearing veins of extraordinary richness, as well as includes many gold-bearing ledges that in magnitude and the wealth of treasure they exhibit are the astonishment of all who behold them. The company has two mills already, one of ten stamps and another of three.

The Rigby mill, at San Antonio, has been for some time at work upon ores from Potomac Hill in that Dist., and from the Scorpion ledge, Reveille Dist. Last week, bullion amounting to 4,337 ozs., produced by the mill, was forwarded to Austin for melting and assay.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise* of May 2d: The aggregate advance in the price of feet in Virginia and Gold Hill Dists., in the last 30 days, has been nearly three millions of dollars. Many of the prominent mines are yielding magnificently, and the indications are that the bullion product of Storey county for 1867 will exceed the yield of 1866 by several millions of dollars.

From same of 3d: Much work is being done in Devil's Gate Dist. on claims that have lain idle for the past three or four years. Those who first worked the claims of the district wanted ores worth \$100 to \$250 per ton or nothing, but the present workers are only looking for ore worth \$25 to \$30 per ton, and they are finding it.

Same of 4th: From the office of Wells, Fargo & Co., in this city, there were shipped during the past week, 7,781 lbs. of assayed bullion, valued at \$253,296.20; from their office in Gold Hill, 6,730 lbs., valued at \$185,906.43.

Same of May 5th: Dall's mill, at Ophir, Washoe Valley, which was destroyed by fire some months since, is now being rebuilt. The mill will contain 60 stamps—part for wet and part for dry crushing—and there will be six roasting furnaces, with barrels for amalgamating, etc. Both water power and steam will be used in driving the machinery. The entire capacity of the mill will be about 120 tons per day. It is intended to have the mill in operation by the first of June.

We saw yesterday a brick from Imperial ore. It weighed 2,112.40-100 ozs.; gold, 361.5 fine; silver, 638 fine. Value—in gold, \$15,785.55; in silver, \$1,742.51—a total value of \$17,528.06.

From the *Trespass* of May 3d: The Crown Point lift-pump yesterday morning, was started in motion. In a few days the company will be able to resume work in the lower drift, west; such a large body of water having been struck some time ago that all work was stopped at the 500-ft. level.

Yesterday, in the matter of Wm. B. Thornburgh vs. Savage Gold and Silver Mining Co., the jury returned a verdict for defendant.

From the Gold Hill *News* of April 29th: There is, perhaps, more ore being milled and more bullion taken out at this time, than ever before in the history of the State. Every available team is pressed into the service, and all the mills are pounding away as though they were trying to make up for lost time.

At the new shaft of the Hale & Norcross, the works are progressing rapidly. They will be the most complete on the whole line of the Comstock. The new shaft is down 300 ft., and although the rock is hard, they sink 22 ft. per week.

**CHEAP TELEGRAPHING.**—The experiment of cheap telegraphy has been made in Belgium with the most gratifying success. The telegraph in that country is controlled by the government. There are 307 telegraph offices open for the public, 2,000 miles of length of lines, and 5,400 length of wires. From 1850 to 1862, the tariff was fixed at thirty cents for twenty words. From 1862 to 1865, the tariff was reduced to twenty cents. Since 1865 it has stood at ten cents. For 1860 the total number of messages sent was 80,000. Under the reduced tariff this number increased to 382,000, in 1865. The returns of the first six months of 1866 show an increase quite in correspondence to the still greater reduction of the tariff during that time. The great success which has attended this first effort at cheap telegraphing is highly important and suggestive. The same benefits and economy which has attended a cheap postal system wherever introduced, will also be realized by a similar reduction in telegraph rates. The time will come when telegraphing must be reduced to a mere moiety of its present rates. The first experiments will doubtless be made by Government, on some of our principal mail routes.

**MR. PEABODY'S WEALTH.**—An Eastern paper says that Mr. Peabody made a will in 1856, in which his bequests amounted to about one hundred million dollars. He has been engaged in many highly lucrative enterprises since, which, with the natural increase of such a vast property, after deducting his more than princely donations, must have fully doubled his wealth.



## Mining and Scientific Press.

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**American and Foreign Patents.**—Letters Patent for Inventions can be secured in the United States and foreign countries through the Mining and Scientific Press Patent Agency. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## Canvassing Agents.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan 11th, 1867.

Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.  
Mr. Frank L. Palmer, is a duly authorized agent for the Mining and Scientific Press. March 23, 1867.  
Mr. S. G. Steele will act as agent for the Mining and Scientific Press from this date. April, 27, 1867.

## San Francisco:

Saturday Morning, May 11, 1867.

## Notices to Correspondents.

**HISTORICUS.**—There are two celebrated English philosophers of the name of Bacon; viz: Roger, better known as Friar Bacon, and Francis, afterwards Lord Bacon. The former is the one you allude to as being the chemist or alchemist. If popular tradition is at all correct, there are good grounds for believing that Roger Bacon discovered the properties of gunpowder early in the thirteenth century; and the tales related about the brazen head which he is said to have kept in his studio, point also to his possessing considerable knowledge of many of the properties pertaining to electricity. Seeing that he lived in a barbarous and superstitious age, it cannot be surprising that he withheld from the vulgar much with which he was acquainted. On returning to Oxford from Paris, in 1240, he became celebrated among the learned at the latter university. By his attempts to expose ignorance and overthrow erroneous scholastic dogmas and the immorality of the clergy, he aroused the enmity of the ignorant and immoral; he was accused of practicing witchcraft, for which the studies alluded to would afford, in that ignorant age, ample coloring. On this charge he was thrown into prison, and nearly starved, and, according to some historians, narrowly escaped being burned as a magician. The *Opus Majus* of Friar Bacon stands amidst those dark pages of history like a beacon upon a waste, being perspicuous and comprehensive, and full of anticipations of the advantages likely to be derived from that mode of investigation afterwards insisted on by his great successor, Chancellor Bacon, nearly four centuries subsequently. Mr. Hallam, in his *History of the Middle Ages*, admits this resemblance in the following passage: "Whether Lord Bacon ever read the *Opus Majus*, I know not; but it is singular that his (Lord Bacon's) favorite quaint expression, *prærogative scientiarum*, should be found in that work; and whoever reads the sixth part of the *Opus Majus* upon experimental science, must be struck by it as the prototype, in spirit, of the *Novum Organum*. The same sanguine and sometimes rash confidence in the effect of physical discoveries, the same fondness for experiment, the same preference of induction to abstract reading, pervade both works."

**T. C. H., Philadelphia.**—The Landgren Process, which you enquire about, we have not had the opportunity of inspecting since the article was written to which you allude. The works have been suspended for several months, on account of legal proceedings, but will soon be resumed again, after which we hope to have further information on the subject. Respecting quartz crushers, we do not feel at full liberty to pass any decided opinion as to their respective merits. We understand that the amount of work accomplished in a given time by machines of equal size is much the same, whether Blake's, or Brodie's, or some of the other machines of similar construction are employed. For further information, we must refer you to their respective advertisements and circulars. This answer has been omitted several weeks, owing to its having been mis-filed.

**COMMUNICATIONS RECEIVED.**—"Markleeville Correspondence," from Serrow, and "Mining Experiments at Wisconsin Hill," by John Scott.

**NEW CHLORINATION WORKS.**—Mr. Mosheimer has shown us the drawings of a new plan of chlorination works, which he has recently designed for Mr. H. McKeadney, to be put up on his mine at Havilah, Kern River. These will be the most extensive works of the kind ever put up on this coast, being of capacity to work six tons every twenty-four hours. The entire mass of ore as it comes from the mill after the ordinary amalgamation works, will be roasted and put through the chlorination process; although the percentage of sulphurets is very small—less than three per cent. The reason for this unusual mode of treatment, is the extreme fineness of the gold. This fineness, and the quantity contained in the sulphurets is such that, as we are informed, although not more than \$45 per ton can be obtained by the ordinary mill process, it has paid at the chlorination works of Mr. Mosheimer, in this city, as high as \$1,700 per ton—as it comes from the mine. Mr. McKeadney has about 100 tons of such ore now on the surface and waiting for treatment. He will put up one of Mr. Mosheimer's combined shelf and reverberatory furnaces. The machinery for these works went down on the last steamer. The sands as they come from the mill, will be collected in settling vats—not even the muddy water being allowed to run away until it has deposited the precious metal which is held in mechanical suspension.

These works will differ somewhat from those of the same character at Grass Valley and Nevada. All the vats and precipitating tanks will be so arranged as to require the least amount of labor in handling the ore, liquors, etc. The tanks and vats will be placed on pivots so that they may be emptied of their contents by merely tipping them with levers. The ore, after being properly prepared will be raised by machinery and sifted instead of shoveled into the tanks; by which mode of handling, the subsequent process of chlorination will be more readily effected. The gas generator is also quite different from the ordinary construction; the gas being applied to the ore under considerable pressure, which greatly facilitates its permeation through the mass. Another important feature consists in the fact that the ore is moistened with a liquid which has a strong affinity for the chlorine by which it is more readily brought into contact with the fine particles of gold which are so intimately mixed with the ore to be treated. We hope soon to hear favorable reports from these works.

**OIL FROM SHALE.**—We have seen some samples of oil derived from a bituminous shale approaching to true coal. The shale from which this oil was distilled is located in Corral Hollow, Alameda county, where retorts have been put up by Messrs. Sutton & Co. The shale, or coal, is raised from a shaft 120 feet deep, at which point it is about four feet thick. It is said to yield from forty to sixty gallons of oil to the ton. Some of this oil was submitted to Mr. J. H. White, on Commercial street, for an analysis. One hundred and twenty fluid ounces yielded as follows:

Oils.	Temperature.	Fluid ounces.	Beaume.
Burning Oil.....	60° Fah.	20	40°
Burning Oil.....	60° Fah.	24	35°
Light lubricating oil.....	60° Fah.	48	27°
Light lubricating oil.....	60° Fah.	16	24°
Water.....		2	
Coke.....		5	
Loss.....		3.5	

The above oil contains about one per cent. of paraffine—a substance which, according to Professor Silliman, is generally absent from the native petroleum of California. The above sample of 120 ounces of crude oil was treated, by slow distillation, under a pressure of 27° Beaume, at 57° Fah. We are not aware of any other attempt to produce oil from shale or coal in California.

**JAMES MACKEN**, coppersmith, No. 226 Fremont street, appears to be doing a large amount of trade in this branch of metal work. Believing in the motto, "*nihil sine labore*," he gives his personal attention to his business.

[Reported for the Mining and Scientific Press.]

## California Academy of Natural Sciences.

## REGULAR MEETING.

MONDAY EVENING, May 6, 1867.

The President in the Chair. About thirty members present.

Messrs. F. F. Thomas, Silas A. White, B. Smith, M. J. McDonald, Wm. Patten and Philip Prior were elected Resident Members, and Dr. C. L. Anderson, of Santa Cruz, Cal., Henry Walter Bates, Assistant Secretary Royal Geographical Society of London, Prof. J. H. Balfour, of Edinburgh University, Dr. John Alexander Smith, F.R.S., of Edinburgh, James Haswell, M.A., of the Geological Society of Edinburgh, Capt. J. B. Calbeck, F.R.G.S., of Singapore, and Sir Roderick I. Murchison, President of the Royal Geographical Society of London, were elected Corresponding Members.

The members who took part in the field excursion to the Twelve-Mile House, made their reports. Mr. Loring mentioned the species of birds seen and collected. Mr. Yale presented an interesting fragment of fossiliferous outcrop, containing many species of shells of the post-pliocene period and many now living. Prof. Whitney remarked upon the singularly isolated character of this outcrop, and alluded to the extensive denudation that had occurred in that portion of the State.

Dr. Behr presented a chrysalis of a peculiar moth from Mazatlan, the female of which does not undergo a metamorphosis or change from the grub state, while the male is the same as other moths.

The President announced the receipt of missing numbers of *Silliman's Journal*, of *Garnett's Gold and Silver Tables*, and of *Ward's Catalogue of Fossil Casts*.

Mr. Stearns submitted, on behalf of J. Rowell, a description of a new species of *Psidium*—a genus of fresh water bivalve—found at Angel Island on the occasion of the late excursion, to which is given the name of *P. Angelica*.

Mr. Stearns read a paper upon Parhelia, and a recent display of these phenomena witnessed by him in this city. Some remarks followed upon sun and moon halos, during which Dr. Gibbons combated the popular notion that halos about the moon were infallible signs of rain. His observations proved that in some seasons these signs invariably failed in California, and at the East no rule, he thought, could be established on the subject.

## DIAMONDS IN CALIFORNIA.

Mr. Goodyear read a paper from Prof. Silliman, noticing several localities in this State where diamonds are found. Several of the jewels were also exhibited.

Prof. Whitney remarked that there are from fifteen to twenty different localities in California at which diamonds have been found in the course of washings for gold. The largest diamond yet found in this State weighed seven and a quarter grains. In reply to a question if there was not some familiar test by which miners might prove them, he answered that the easiest way was to try their hardness on other gems; but miners have not always these convenient to do so. A knowledge of the crystalline form, twenty-four sided, and the faces curved, was the surest test. The curved faces are often supposed to be the result of attrition by the action of water. Such is not the case; the diamond is too hard to yield to such action. He said that the popular notion that a diamond could be hammered out on an anvil without breaking, was a mistake, resulting from confounding hardness and toughness. He remarked further that it would not pay in California to wash the gravel beds solely for diamonds. Diamond washings do not pay in any country except with slave or convict labor.

## THE AGE AND POSITION OF COAL FORMATIONS.

Prof. Whitney read a very interesting paper on the age of the coal formations and the geological position of coal. He also stated that modern geological explorations had materially modified the earlier opinion of geologists with regard to the occurrence of coal. It was formerly held that valuable beds of coal were confined to a particular position in the series of geological formations; but it is now ascertained that while the important coal fields of Eastern Europe and the Eastern United States are of Paleozoic age, those of China, India and Australia belong chiefly to the Mesozoic series, while there are important deposits even as recent as the Cainozoic or Tertiary. The coal of the Pacific coast of North America belongs chiefly to the upper Cretaceous—the subdivision next below the Tertiary. The Professor called attention to the fact that the Cretaceous series, in which the coal of this coast is found, when occurring in

other parts of the world, is found to be one of the most barren in combustible material. Contrary to common report, no important deposits of coal have yet been found in the "Russian Possessions" on this coast. The desirableness and importance of coal discoveries in the region between the Sierra Nevada and the Rocky Mountains, was referred to in connection with the successful operation of the Pacific Railroad. The wood along the route must soon disappear. The hope was expressed that the geological expedition along the line of this route, recently set on foot under the direction of Mr. King, might be the means of developing some valuable information in this particular. A very excellent specimen of coal was exhibited to the Academy, which was taken by some member of the railroad survey from a load of coal which was being hauled to Salt Lake City, last summer, from a coal mine near this route.

## THE "SEQUOIA" FOUND FOSSILIZED IN GREENLAND.

Prof. Whitney mentioned, as a most interesting fact, that among the fossil miocene plants found in coal beds in Greenland, where eternal ice reigns now, are the sequoias or big trees now found living only in California.

## EXPLORATION OF RUSSIAN AMERICA.

Dr. Cooper stated that Mr. Ridgeway, the zoologist appointed to accompany the Government exploration of Russian America, when on that coast, a few years since, had found birds nearly identical with living species in Asia—a fact of much interest, since none of the same species are found on the eastern coast of America. There is here another suggestion of the former intimate relations between Western America and Eastern Asia.

## AN IMPORTANT GEOLOGICAL PAPER.

Prof. Whitney submitted for publication a very valuable paper by Baron Richthofen, on the subject of geology, particularly with reference to the natural system of volcanic rocks. Its publication as the first volume of the Academy's Memoirs was proposed. It consists of 150 manuscript pages.

Prof. Whitney presented the tooth of a hyena found in Calaveras county, and the first fossil remains of that animal found in America.

**A SELF GENERATING GAS LAMP.**—This useful lamp is now manufactured by Mr. John J. Hucks, at his factory, at North Beach, in this city. The principle on which it works is similar to that on which the petroleum stove operates. A good idea of its construction may be obtained by examining the representation which is given of it in connection with the advertisement in another column. The petroleum, naphtha or benzine is placed in a reservoir, shown at the upper extremity; when filled, in order to light the lamp, turn the cock, seen about half way from the reservoir, to the point where the flame is represented. On doing so, a portion of the oil will find its way into the little cup under the blaze. Set fire to this, and its burning will soon create sufficient heat to convert the benzine in the generator directly over the cup into gas. This gas now passes upward into a properly constructed burner, where it will continue to burn wherever a gas jet will hold its flame. Some of these lamps are so constructed that nothing short of a most violent gale of wind will extinguish them until the supply is cut off. Such lamps are intended for out-door works, or in underground operations that are carried on in the midst of strong currents of air. These lamps are also especially valuable for use in saloons and other places where doors are constantly being opened and shut, admitting strong currents of air. The ordinary kerosene lamp cannot be successfully burned in such places, and much inconvenience is, in consequence, often encountered, where gas works are not established. These self-generating gas lamps afford the cheapest light attainable, and can be relied upon anywhere. They have been used for twenty years in England, and are now just being introduced into this State. Until quite recently they have been imported; but the demand is such that an establishment for their manufacture has now been started in this city, thus adding still another to our rapidly increasing branches of industry. These lamps may be seen and their operation fully explained by calling at No. 13 Kearny street.



## Order Bussey's Combination Burglar and Powder-Proof Keyless Lock!

### REASONS WHY.

- 1st. It is the best Combination Lock known.
- 2d. It is impossible to pick it.
- 3d. It can be subjected to over half a million changes, and when run by a burglar, he is no nearer entrance than when he began.
- 4th. It has no key to lose.
- 5th. The more it is used the better it is liked.
- 6th. It has no signs, letters or figures, on its face.
- 7th. It is the simplest to understand.
- 8th. It is impossible to open it without knowing the set.
- 9th. It is least possible to get out of repair, as any one will be convinced on examination.
- 10th. It is the strongest Lock.
- 11th. No possible derangement of combination can be made.
- 12th. Amador County has adopted this Lock for its safes.
13. It received a special premium at State Fair.

### REFERENCES:

S. COSNER, Sheriff.  
W. WALTER, Treasurer.  
W. JENNINGS,  
G. H. ENALLIS, Supervisors.  
L. McLAINE.

Any good blacksmith can put this lock on safe doors, boxes or single old locks removed and this placed in their stead, to work one, two, three or four bolts, as the case may be. [See page 30 in Pacific Coast Directory.] A dealer or blind man can open this lock when he knows the set and understands the full manipulation, without any expert detecting the combination.

### Opinions of the Press and others in regard to Bussey's Combination Lock.

The Bank of British Columbia ordered the first one of these locks introduced in this city, and the following recommendation has been received by the inventor:

BANK OF BRITISH COLUMBIA.

San Francisco, May 24, 1866.  
Recently, two of Wm. C. Bussey's new Patent Combination Burglar Proof Locks were placed upon the vault doors of the Bank of British Columbia. They are found to operate with all the efficiency claimed by the inventor, and in every way meet our fullest approval.

They were ordered upon mature deliberation, after strict investigation of their merits, in comparison with some of the most noted and popular old styles of combination locks.

We deem the lock entirely burglar-proof. It is strong in construction, without intricate or delicate parts, with simple and easy movement. We find no difficulty in either opening or closing it, nor in changing its combinations, which may be made almost innumerable.

As a California invention of extraordinary merit, we take pleasure in recommending it to public attention, believing it to possess all the advantages which are claimed for it.

WM. H. TILLINGHAST, Sub-Manager.

We do hereby certify, that Wm. C. Bussey's Combination Lock is the best Safe Lock in existence, and impossible to be picked. We have applied several to vaults and safes, to entire satisfaction to parties interested.

KITREGE & LEAVITT,

Pioneer Iron Works, cor. Fremont and Market sts. San Francisco, May 6, 1867.

I do hereby certify, that Mr. Wm. C. Bussey's Combination Lock is the simplest and strongest in construction, and the least possible to get out of repair; and for Safes and Vaults in every other respect as good as any other improved combination lock which I am acquainted with.

JOHN R. SMITH,

Vault Manufacturer, Oregon street.

JACKSON, April 27, 1867.

The undersigned, Sheriff of Amador County, do hereby certify that I am using one of Wm. C. Bussey's Keyless Combination Locks on my safe, which is made to draw four bolts with facility. I believe the lock to be the best lock ever invented, for the following reasons:

- 1st—Because it is impossible for either burglar or expert to pick it.
- 2d.—The lock being constructed without a key-hole, it cannot be blown to pieces by powder.
- 3d.—There is no possibility of deranging the combination by breaking off, or attempting to drive the knobs into the safe. And it is in fact the nearest approach to perfection yet arrived at in the art of Lock making.

R. COSNER.

Attested by J. C. SHIRMAN, County Clerk.

JACKSON, April 27, 1867.

The undersigned, Treasurer of Amador County, do hereby certify that I am now using Wm. C. Bussey's Keyless Combination Locks. It is fastened to the outside door of the Treasurer's safe. I have no fear of any bystander gaining a knowledge of the set of the combination, when locking or unlocking the same. If I desire to have access to the safe every few minutes, I can so adjust the combination as to open this lock in two seconds of time. I am exceedingly well pleased with the same, and I deem this lock to be all that the inventor claims for it.

OTTO WALTER.

Attested by J. C. SHIRMAN, County Clerk.

CALIFORNIA LOCK AWARD.—A special premium was awarded Mr. W. C. Bussey, for his superior Combination Burglar and Powder Proof Safe Lock, at the recent State Fair. We are sure no award was ever more meritoriously bestowed. This Lock was described at length in the Press several months since. At that time it was adopted by several banking houses in this city, and we are now assured that the remarkable claims asserted in favor of the lock at that time, have been confirmed since by its practical use. We feel an interest in this California invention, and wish to see it speedily meet with the success it is ultimately certain to attain. Mr. Bussey, having properly first fairly tested his lock in California, is now desirous of introducing it in the East, and offers to dispose of the right for several States at very reasonable rates. [Mining and Scientific Press, Sept. 29, 1866.]

They are the only safe lock ever invented. Every State and County treasury vault, and every bank and business place should have one.—[Amador Ledger.]

This is a lock in which a series of rotating annular tumblers is employed, and it consists in a novel arrangement of such tumblers in connection with one or more arms connected with one or more bolts, whereby an extremely simple and effective lock is obtained, presenting an almost unlimited number of combinations. For which it was awarded a special premium at the State Fair.—[Sacramento Union.]

We, the undersigned, practical Locksmiths, unhesitatingly pronounce Bussey's Improved Combination Burglar Proof Lock to be the most reliable lock constructed.

F. MARKT & C. FLEISHEL,

19v14my11&S.1am

No. 18 Post street.

## Excelsior Double-Acting Suction and Force Pump.

The Best for Mining, Farming and Domestic Use.

Hooper's Patent, Aug. 15, 1865.

THE EXCELSIOR PUMP is a California invention of intrinsic merit, and as such is being rapidly introduced, and giving perfect satisfaction. At the Mechanics' Institute Fair (1865), it was awarded, for its superiority, a **Premium Medal.**

It is manufactured by California Mechanics, in the most perfect and durable manner.

It is remarkably simple in construction, and its valve chest is almost instantly accessible without disconnecting the air-chamber, suction or discharge pipes. It can be worked at any speed.

Figure 1 is a sectional view of a 6-inch Mining Pump, showing the plunger and hemipumping, and the valve-chest containing the puppet valves. Fig. 2 illustrates the water-pistons and valve seats in the chest.

The following sizes are constantly manufactured of this

### SUPERIOR DEEP-WELL PUMP.

- No. 1—Cylinder 2½ inches; stroke, 6 inches; capacity 750 gallons per hour; weight, 60 pounds.
- No. 2—Cylinder, 3 inches; stroke, 7 inches; capacity 1,250 gallons per hour; weight, 80 pounds.
- No. 3—Cylinder, 4 inches; stroke, 8 and 8 inches; capacity, 2,500 gallons per hour; weight, 20 pounds; with iron frame and slide complete.
- No. 4—Cylinder, 5 inches; stroke, 15 inches; capacity 5,420 gallons per hour; weight, 300 pounds.
- No. 5—Cylinder, 6 inches; stroke, 24 inches; capacity 12,575 gallons per hour; weight, 1,000 pounds.

Nos. 3, 4 and 5 are made to endure the severe test of use in mines, and are constantly superseding those of other manufacturers. The pistons being packed with hemp, are proved to be far more durable and less expensive than leather.

We manufacture to order 8 and 10-inch Pumps. Also, sell at cheap rates, 5 and 6-inch Brass Pumps for ships.

See illustration of the Valve of this Pump, and further description, in another part of this paper.

For Circulars, or further particulars, inquire of or address J. W. BRITTON & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or 1am CUSHING & CO., Prop'rs, San Francisco.

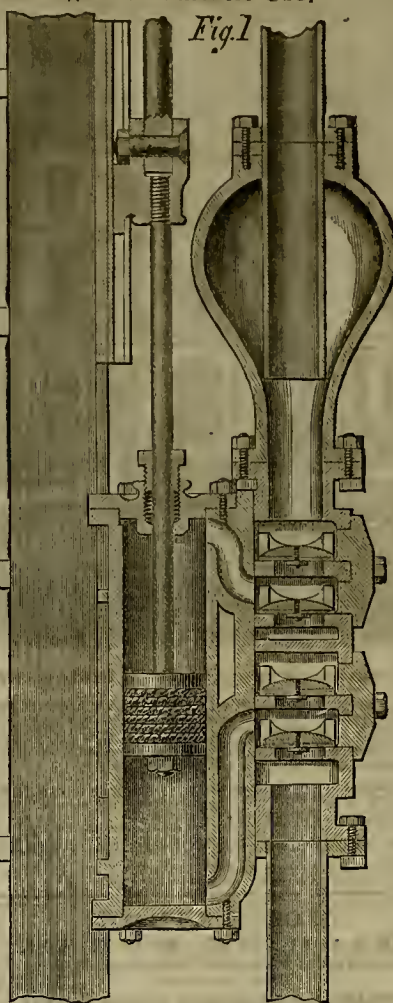
**A METALLURGICAL MIRACLE.**—Bellani mentions the following very curious experiment: "If you melt an alloy of tin or lead in a crucible or ladle, and then allow it to get cold, and afterwards write with ordinary ink on the surface of the metal, which has been in contact with the sides of the vessel; you may again melt the alloy, and after it has cooled you can still read the letters on the surface! The melting may be repeated several times, and the letters will still be visible, even if the metal has been stirred while melted." Bellani's explanation of this curious phenomenon is, that a very thin layer of oxide is formed by the ink, which oxide is not reduced by the repeated burning of the metal.

**A NEW QUARTZ MILL.**—We would call attention to the advertisement of Mr. J. B. Hitchcock, in our issue of to-day. Mr. H. is agent for a new quartz mill. This mill is very complete, and the workmanship superior. The stamps are of about 800 pounds weight each; and the pans of the Hepburn & Peterson pattern. The price is reasonable. Call and see it.

**SPONGE PILLOWS AND BEDS.**—It is claimed that common sponge, finely cut up, is fully equal to feathers for pillows and beds, while it does not cost half so much. The cheapest sponge, well cleansed, is about as good as the dearest. Hence, large quantities might be turned to this useful purpose.

**STATE TEACHERS' INSTITUTE.**—This body is now in session in this city. It is fully attended. The exercises are of an extremely interesting character. Such re-unions and comparing of notes cannot but be of the greatest benefit to all who take part in them.

**FELTON & TAYLOR.**—Messrs. Franklin E. Felton and James M. Taylor have recently entered into copartnership for the practice of law, with a view to devote especial attention to proceedings under the patent law. Their office is at No. 536 Clay street.



NEBRASKA GEOLOGY.—A Washington telegram of May 7th, says that Dr. Hayden, of the University of Pennsylvania has been appointed to make a geological examination of Nebraska.

**Builders' Insurance Company.**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 16v14pqr

### QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

### First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or

J. B. HITCHCOCK,  
Millwright, Russ House.

### LINSEED OIL.

### The Pacific Linseed Oil & Lead Works

Are now prepared to furnish dealers and consumers

### Pure Linseed Oil,

Raw or Boiled, at the Lowest Market Rates. We call especial attention to the quality of our Oil, believing it to be superior to any imported Oil offered in this market. Orders from the country will have prompt attention.

Address,  
Pacific Linseed Oil and Lead Works,  
Care of L. B. BENCHLEY & CO.,  
San Francisco.

### MARTIN L. HAAS,



### Pearl Shirt Manufactory,

Southeast corner Sansome and Halleck sts.

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### PACIFIC

### Rolling Mill and Forge Co.,

SAN FRANCISCO, CAL.

Established for the Manufacture of

### RAILROAD AND OTHER IRON

### Every Variety of Shafting,

Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

### HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention.

The highest price paid for Scrap Iron. 9v143m3p

### A. S. Hallidie & Co.,

MANUFACTURERS OF

### FLAT & ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach

**NOTICE.**—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Wire Ropes, which have been in use for a number of years by the leading mines on the Coast, and many of whom we refer those interested as to the great advantages over any other kind of rope, effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—  
**Round Wire Rope**—Iron or Steel, for Hoisting.

**Flat Wire Rope**—" " " " " "

**Soft Steel Wire Rope**—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

**Galvanized or Ungalvanized Round Wire Rope**—for Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.

**Steel Ferry Ropes**—For wide streams. Ferry Blocks supplied.

**Iron and Copper Wire Cord**—½ to ¾ inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cir. 100 ft.	Cir. 100 ft.	Cir. 100 ft.	Cir. 100 ft.	Brk'g Str. lbs.
2 55 15	33 5 100	1 3 3	1 3 3	2,300
2 83 2	55 6 130	1 3 3	1 3 3	3,700
3 170 2	91 8 236	1 3 3	1 3 3	6,300

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers.

The foundries and machine shops throughout the city are unusually busy at the present time. We have another article in continuation of our series on "Foundry and Machine Works," in type, which is crowded out to-day.

Jacob Snew, Pioneer Photographer, 612 Clay street, north side, four doors above Montgomery, (late 315 Montgomery street,) takes all kinds of Photographs in the best style of the ART. He would invite special attention to the new "Cabinet Photographs," which he is taking to perfection. 16v14f

**Brown's Filtering Heater.**—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to 5v14-ly AUSTIN A. WELLS, Agent.

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and in many instances, unnecessary. DR. BEERS, corner of Pine and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with pure gold—thus restoring them to their original usefulness and beauty.

Call and examine the work. Finest quality of artificial work also manufactured. 16v14-1f

Persons desirous of obtaining the finest Wood Engravings, can procure them only by having the picture photographed on the block, by D. H. WOODS, No. 23 Third street. 19v14ftr

**Gold Bars,** of whatever size, if well cast, assayed for two dollars, at A. P. MOLLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

### CUT NAILS.

2,000 KEGS ASSORTED SIZES.

For sale in any quantity, to close invoice, at the very

Lowest Rates, by

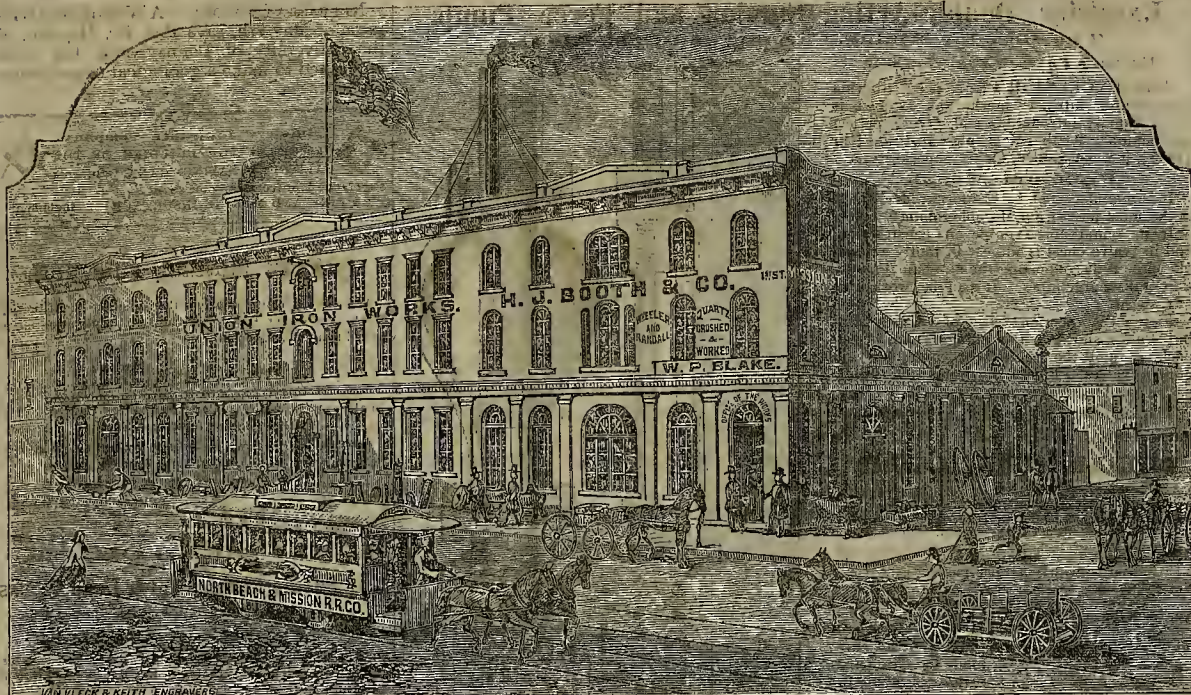
THOS. H. SELBY & CO.,

116 and 118 California Street,

SAN FRANCISCO.

19v14 3m





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared, at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coining Machinery, File Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-Off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's improved Tractory Curve Pan, Zenas Wheeler's improved flat bottom pan, Beldin's pan, Yeatch's tubs, Prater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills. Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements. Every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

GEO. W. PRESCOTT.

IRVING M. SCOTT

H. J. BOOTH & CO.

## Machinists and Foundries.

### PALMER, KNOX & CO.,

#### Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

#### MACHINERY,

#### STEAM ENGINES AND QUARTZ MILLS,

DUNBAR'S IMPROVED

#### Self-Adjusting Piston Packing,

Requires no springs or screws, is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

#### NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

#### AMALGAMATOR AND SEPARATOR,

#### Tyler's Improved Water Wheel,

Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

KNOX'S AMALGAMATORS,

#### WITH PALMER'S PATENT STEAM CHEST,

Superior for working either Gold or Silver Ores.

#### Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for producing gold, or saving either gold or silver. 18v12-17

### WILLAMETTE IRON WORKS,

PORTLAND, OREGON.

#### Steam Engines, Boilers,

#### SAW AND CRIST MILLS,

#### MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-First and E streets,  
18v13-1y One block north of Couch's Wharf.

### UNION IRON WORKS,

Sacramento.

#### WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

#### CROSS' PATENT BOILER FEEDER,

#### STEAM ENGINES, BOILERS,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

#### Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

J. MARSHALL GLASGOW W. WYLLIE.

#### IRON & METAL IMPORTING COMPANY,

Nos. 25 and 27 Fremont street, near Market,  
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Bar and Sheet Iron; Boiler Plates and Tubes; Gas and Water Pipes, Gas Fittings, Anvils, Cast Steel, etc. 18v14-2m

### GEORGE T. PRACY,

#### MACHINE WORKS,

Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

#### STEAM ENGINE, FLOUR AND SAW MILL

And Quartz Machinery, Printing Presses,

—AND—

MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24v12

### SAN FRANCISCO

#### Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets,  
Manufacturers of

#### Marine and Stationery Engines

Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

#### Wine, Cider, Cotton and Tobacco Presses

of the latest Improved Patterns.

#### STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston-Packing, requires no springs or screws, is always steam tight; without excessive friction, and never gets slack or leaky.

MACHINERY, OF ALL DESCRIPTIONS

Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-1y DEVOE, DINSMORE & CO

### GLOBE

#### Foundry and Machine Shop,

STOCKTON, CAL.

### KEEP, BLAKE & CO.,

MANUFACTURERS OF

#### Quartz, Saw and Grist Mill Irons, Steam

Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited

13v13-1y and promptly executed.

LEWIS COFFEY. J. S. GIBSON

#### LEWIS COFFEY & RISDON,

#### Steam Boiler & Sheet Iron Works.

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work executed as ordered, and warranted as to quality.

Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

### CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Brasses, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. 24v12

V. KINGWELL. 18v13-1y J. H. WEED.

### HANSCOM & CO.,

#### Etna Iron Works!

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

#### Practical Machinists and Iron Founders,

#### MANUFACTURE

#### STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

HANSCOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else

Wheeler & Randall's New Grinder and

Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use

Send for one of our circulars, giving full tables

All Wheels warranted to give the power as set forth, or the money will be refunded.

Sole makers for this coast of the "Pendergast

White Iron Stamp Shoes and Dies.

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.

18v12

19v12

### FULTON

#### Foundry and Iron Works.

### HINCKLEY & CO.,

MANUFACTURERS OF

#### STEAM ENGINES,

#### Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-4y

#### NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

#### MARINE

#### Locomotive,

And all kinds of

HIGH PRESSURE

MADE.

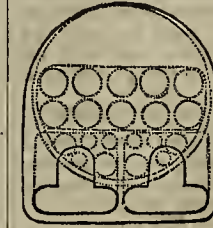
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Cast Oil Stills, Wrought Iron

Worms, etc., etc. Manufactured to Order.

Old Boilers Repaired

D. CAMERON.



6v12-1y

**SEDIMENT IN A HORSE'S STOMACH.**—We some time since gave a full account of the accumulation in the stomach of an ox, known as a "hair ball." Such aggregations are quite frequent in the bovine species, but are unknown in equine animals. A case, however, has recently been reported in Ireland, where a horse died of inflammation of the stomach, caused by the accumulation of a mass precisely like that of a hair ball, in form and aggregation, but composed of hairs from the husks of oats, cemented together into a round mass, with a glutinous accumulation of magnesia and lime. The hairs, for such accumulations in the stomach of an ox, are obtained from the animal licking itself; a horse never licks, consequently the hairs from his body can have no access to his stomach; but it may readily be conceived how the more indigestible portion of the covering of the oat kernel, above described, may commence an aggregation which would naturally end in the death of the animal.

**CHINESE FOR IDAHO.**—The Grass Valley Union, says that men from that place have contracted with a party of thirty-eight Chinamen to carry them to Idaho Territory, at the rate of \$38 per head. Each Chinaman is entitled to 150 pounds of freight.

The Marysville Appeal says the Chinese houses of that city are fitting out mining parties for Idaho.

From other sources we hear of numbers already on the road, making the journey by the various routes on foot.

**CHINESE TEA OF AMERICAN GROWTH.**—Plants of the Chinese tea shrub were recently in full bloom in North Carolina, and were fully five feet in height. Five pounds of "Bohea" made in 1865 from the leaves of these plants were considered equal to the best imported.

### TOWNE & BACON,

#### Book and Job Printers,

Have the Largest Office,

Do the most work,

And do it better

Than other offices

In this City,

536 Try them

With a Job,

And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,

Over Pacific Fruit Market.

### CITY IRON WORKS COMPANY.

F. CLERC, R. KLEINCLAUS, W. DEBAIR.

#### CLERC & CO.,

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.

9v14cm

#### J. NEWSOM. J. BIGWOOD.

#### SOUTH BEACH IRON WORKS,

Near corner of King and Third streets, San Francisco.

#### MARINE ENGINES,

AND ALL KINDS OF

#### MACHINERY FORGING.

All kinds of Ship-building and Mill work manufacture to order. Jobbing of every description promptly attended to.

All work done guaranteed. 13v14-17

#### JOHN LOCHHEAD'S

#### Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT

to order—Marine, Stationary, or Locomotive.

HOISTING AND PUMPING ENGINES,

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**TO PREVENT DRAFNESS.**—It is said that deafness among old people is too often the result of a lack of cleanliness. Those who are in the constant habit of carefully washing out their ears every day, very seldom become deaf from old age. Mr. T. M. Hopkins, an octogenarian, of Geneva, New York, reports to the American Institute that he has given this hint to several of his friends whose hearing was beginning to be impaired by old age, as they thought, but who, by compliance with this simple suggestion, have soon recovered it. Let those who are similarly afflicted, and who have neglected this trifling act of cleanliness, make the trial, and see if perchance they, also, may not be benefited by the hint.

**B. F. HOWLAND,**  
PHOTOGRAPHER,  
Nos. 25 and 27 Third street, east side, near Market street,  
San Francisco.

Enamelled Cards, Ambrotypes and San Pears, executed in a superior manner. Small pictures coated and enlarged to any size, at one-half the price usually paid for such work. Various Views only \$1.50 per dozen; Vignettes at \$1.00 per dozen. We warrant our work to be superior to any made in this city or State. Send us a card and receive specimen.

**J. S. PHILLIPS, C. E. M.,**  
Mining Engineer of Cornwall,  
WHO CAME TO WORK LEDGES FOR A NEW YORK Company, at Humboldt, Nevada, last year for examination and Superintendence of Mineral Properties, in consequence of the condemnation and immediate abandonment of those operations.  
Reference—B. W. MURPHY, 525 Clay street, San Francisco. 6v14tf  
Humboldt City, Nevada. 6v14tf

**JOHN TAYLOR & CO.**  
IMPORTERS,  
AND DEALERS IN—  
**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and REEGER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, NUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention to select such articles as are necessary in the development of the mineral wealth of this coast. A full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

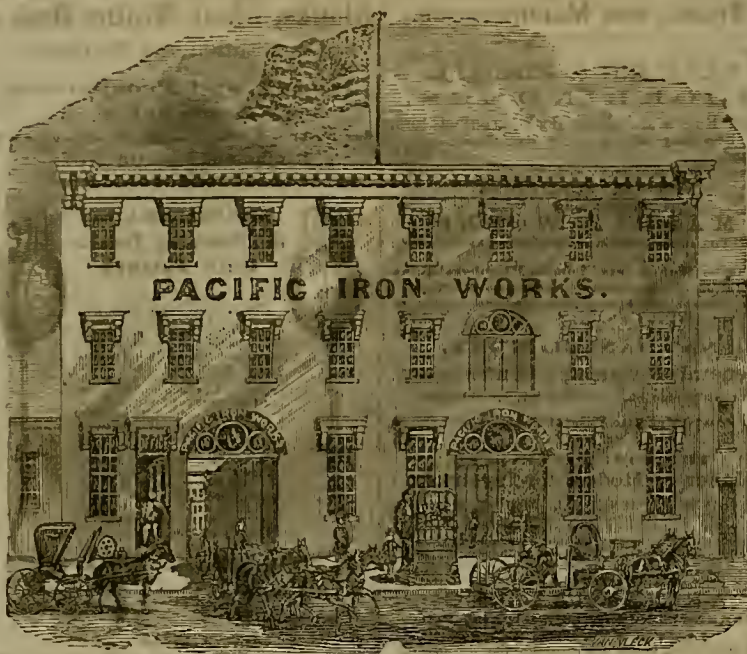
**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
**E. D. WATERS & CO., Prop'rs.**  
K. D. WATERS, Sec'y. T. F. CHORISH. J. H. CARMANY,  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.  
The Mercantile Gazette and Prices Current is the only Commercial Paper  
ON THE PACIFIC COAST.  
PUBLISHED EVERY STEAMER DAY.  
Terms, \$0 per Year, payable in advance.

**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every STEAMER DAY.  
13v13-1f

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.  
Prices varying from \$1.50 to \$2 per day for Board and Room.  
FINE BATH HOUSE and BARBER SHOP ATTACHED TO THE HOUSE.  
Teams belonging to the House will be in attendance at all the hotels and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
21v12 F. E. WEYGANT, Proprietor.

**STOCK CERTIFICATES,**  
**STOCK TRANSFER JOURNALS,**  
**STOCK LEDGERS,**  
**ASSESSMENT RECEIPTS,**  
And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call special attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Creese Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryna Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.  
**GODDARD & COMPANY.**

**A. S. CHURCH, S. D. CLARK,**  
IMPORTERS AND DEALERS IN  
Mediterranean and California  
**FRUITS, NUTS, CONFECTIONERY, Etc.,**  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 497 Front st., San Francisco.  
Printed list of kinds and prices furnished. 8v13-6m1p

**NEW YORK PRICES.**  
**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
VERY FINE WATCHES FOR LADIES.  
A large assortment of Gold Chains and Jewelry 25v10-6m  
**WATCH REPAIRING AT NEW YORK PRICES.**  
**WATCH REPAIRING AT NEW YORK PRICES.**

**THE WILCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly Come and see it, or send for Report of the trial.  
**SAMUEL SWIFT, Agent,**  
13v14-6m 203 Kearny street, near Sutter.

**LUCY & HYMES,**  
MANUFACTURERS OF  
**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**

Factory—Beale st., bet Mission & Howard.  
Office, 319 California street, San Francisco. 17v14tf

**To Capitalists.**  
GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$80,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to  
BELL & FRERES, Bankers,  
535 Clay street, San Francisco. 23v13-6m

**RADICAL CURE**  
—OF—  
**RUPTURE!**

Treatment of all Deformities of the Body, by DR. A. FOLLEAU, process, 424 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.  
**DR. A. FOLLEAU**  
Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
8v13-1y1p

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
On Saturday, February 9, 1867.  
An Entirely New Style of  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast. 8v14  
Call and see them. 201 CL A

**ITALIAN MANUFACTORY**  
FIRST PREMIUM 1857  
1858 1864 1865  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 Sansome St. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

**Copartnership Notice.**

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Rinds, Moldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. B. MACDONALD,  
JOS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m

**Machinists and Foundries.**

**Miners' Foundry**  
—AND—  
**MACHINE WORKS,**  
Nos. 245 to 255 First Street,  
San Francisco.

**HOWLAND, ANGELL & KING,**  
PROPRIETORS.

**Manufacturers of Machinery for**  
**QUARTZ MILLS, FLOUR MILLS,**  
**SAW MILLS, SUGAR MILLS,**  
**POWDER MILLS, PAPER MILLS.**

**Steam Engines of all Kinds.**  
**Amalgamators of all Kinds.**  
**MINING PUMPS, HOISTING WORKS,**  
**OIL WELL TOOLS, ROCK BREAKERS,**

—AND—  
**Machinery and Castings of all kinds, either of Iron or Brass.**  
**Boilers and Sheet Iron Work in all its Branches.**

**Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.**

**Russin Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable, of any Engine in use.**

**W. H. HOWLAND, E. T. KING,**  
**H. B. ANGELL, CYRUS PALMER.**  
13v14-qr

**Vulcan Forge**  
—AND—  
**MACHINE SHOP.**

**L. P. GARCIN,**  
No. 32 Sutter street, between Sansome and Montgomery,  
MANUFACTURER OF

**Printing Presses & Printers' Material,**  
Contractor for all kinds of  
**Machinery, Patterns, Models and Drawings**  
For the Patent Office at the City of Washington. **Tool Maker** for all branches of mechanics. Repairing done at short notice and perfectly executed. All work guaranteed.  
14v14-ly

**JAMES MACKEN,**  
**COPPERSMITH,**  
No. 226 Fremont st., bet. Howard & Folsom  
All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
Repairing promptly and neatly attended to.  
13v11

**Pacific File, Reaper and Mower Section**  
**MANUFACTORY,**  
No. 53 Beale Street, between Market and Mission,  
SAN FRANCISCO.  
Files Recut and warranted as good as new, or no charge. The only establishment in the State. We also manufacture Reaper and Mower Sections.  
12v14-3m S. BENSON & CO., Prop'rs.

**Hazard's Powder.**  
**BLASTING AND SPORTING**  
**GUNPOWDER,**  
SUPERIOR QUALITY.

Also, **SAFETY FUSE OF ALL KINDS.**  
**EDWARD H. PARKER,**  
Agent for the Hazard Powder Company, 224 California Street. 13v14tf

**Attention! Attention! Attention!**

**Look to Your Health in Time!**  
**HEALY'S CURATIVE OIL, FOR THE SURE AND speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Mechanic, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the greatest Remedy of the age.**  
Are you afflicted with Rheumatism? Use Healy's Curative Oil!  
Have you the Headache? Use Healy's Curative Oil!  
Have you a Sore Throat? Use Healy's Curative Oil!  
Have you the Toothache? Use Healy's Curative Oil!  
Are you subject to Cramps? Use Healy's Curative Oil!  
And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None genuine unless the fac simile signature of FRANK HEALY is on the outside wrapper of the bottle.  
Wholesale Agents—Crane & Brigham, and R. H. McDonald & Co., San Francisco; and at retail by all respectable Drug gists and Grocers. Price, \$1. 2v14-10p

**GOVERNMENT HOUSE,**  
Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.  
THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes.  
The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half, they are required to pay at hotels.  
17v13-6m SARTON & CO.





OF MILWAUKEE:

OVER FIFTEEN THOUSAND MEMBERS!  
And \$2,000,000 Assets!

ALL PROFITS

Divided Among the Insured.

Dividend Jan. 1st, 1867, \$113,176.26.  
Sacramento References.—HENRY MILLER, of D. O. Mills  
& Co.; G. F. Hartwell, Asst. Supt. C. P. R. R.  
9v14gr1f12p

## Golden City Chemical Works.

LABORATORY,

Corner of Seventh and Townsend Streets.

OFFICE,

Corner of Montgomery and Bush Streets.

CAPITAL STOCK, --- \$500,000

Trustees:

H. P. WAKELEE, THOS. H. SELBY,  
NICHOLAS LUNINO, THOS. BELL,  
CHAS. E. McLANE.

H. P. WAKELEE.....MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH  
Sulphuric, Nitric and Muriatic Acids of superior quality,  
in quantities to suit.

Orders will be received at the office only for Chemicals of  
every description, which will be manufactured as may be  
required. The Company beg to say that they have the ad-  
vantages of all improved machinery and apparatus for the  
manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v143m

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HONGKONG, 1867. 13v14tf

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smoke nor smell, and burns with  
a pure white flame, equal in in-  
tensity to an ordinary gas burn-  
er, and at an expense of from one  
to three cents per hour only, ac-  
cording to the quantity of light  
required. It is peculiarly adapted  
for mining purposes, also for  
stores, factories, billiard rooms,  
and in fact, for all purposes  
where regular and steady light is  
needed, and for which it is an ad-  
mirable substitute. As an out-  
door light it stands unrivaled,  
burning with undiminished bril-  
liancy in a strong wind.

Charge the reservoir with the prepared fluid, or with  
Benzine, from half to three-fourths full; allow a portion to  
run through into the cup, then turn off the tap and ignite  
the fluid, which will heat the burner sufficiently to gener-  
ate the gas, which will be seen issuing from the top. The  
lan must now be turned on, and a steady light will be main-  
tained till the whole of the contents of the reservoir is con-  
sumed.

A small needle, bent at the point and fixed in a holder,  
may be occasionally required to clear the minute hole  
through which the gas issues, and the regulating screw at  
the bottom turned a little back; but care must be taken not  
to force the screw too high, and it should never be used to  
extinguish the light—by turning the tap off, it will gradually  
go out.

When necessary to renew the cotton which is placed in  
the lower pipe to prevent the too rapid flow of the fluid, the  
lamp should be placed in a vise and the burner screwed off.  
The burnt cotton must then be withdrawn, and a fresh  
piece of stout cotton rag, one inch wide and four or five  
inches long, should be doubled over a piece of wire, and  
inserted into the pipe—the ends cut short off, the burner  
again screwed on with a little white lead, and the lamp is  
ready to use.

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rietor, Factory, North Beach, San Francisco; and for sale  
by his agents in every city and town throughout the State.  
18v143m

## New Mining Advertisements.

**Diana Gold and Silver Mining Company.**—Lo-  
cation of Works: Lander County, Nevada.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
twenty-second day of March, 1867, the several amounts set  
opposite the names of the respective shareholders as fol-  
lows:

Names.	No. Certificate.	No. Shares.	Amount.
H. H. Allen.....	236	8	\$15 00
Oliver Ames.....	252	50	25 00
E. T. Andrews.....	259	10	50 00
Henry C. Angell.....	360	10	50 00
J. C. Bateman.....	211	20	20 00
E. G. Bidleman.....	363	58	174 00
Chas. A. Baldwin.....	261	20	100 00
Henry Blaney.....	362	6	30 00
Geo. Wm. Bond.....	363	10	50 00
Oliver Brewster.....	361	10	50 00
J. B. Bidleman.....	400	36	180 00
Oliver S. Chapman.....	366	20	100 00
Cadwalader Curry.....	367	10	50 00
Thos. Dalby.....	368	250	1250 00
George E. Downes.....	369	20	100 00
Wm. Endicott, Jr.....	370	10	50 00
Fischer & Chapman.....	371	20	100 00
Wm. H. Forbes.....	371	20	100 00
John Gardner.....	372	20	100 00
A. A. Gilmore.....	373	20	100 00
E. W. Gilmore.....	374	20	100 00
E. W. Gilmore.....	375	10	50 00
John Hastings.....	214	10	50 00
John Hastings.....	212	6	25 00
John Hastings.....	216	20	100 00
Mark Healy.....	376	30	150 00
Alonso P. Howard.....	377	10	50 00
Wm. Priddham.....	378	1	5 00
N. S. Scudder.....	379	12	60 00
Geo. L. Stearns.....	379	10	50 00
J. H. Stephenson.....	380	33	165 00
J. H. Stephenson, Trustee.....	381	1	5 00
James Sturges.....	382	10	50 00
Annie F. Sullivan.....	383	5	25 00
Annie F. Sullivan.....	384	5	25 00
Wm. S. Tilton.....	385	5	25 00
H. B. Wheelwright.....	386	5	25 00
Henry Whitney.....	387	5	25 00
E. A. Wild, Trustee.....	388	10	50 00
E. A. Wild, Trustee.....	389	10	50 00
E. A. Wild, Trustee.....	390	10	50 00
E. A. Wild, Trustee.....	391	10	50 00
E. A. Wild, Trustee.....	392	10	50 00
C. O. Walworth.....	393	10	50 00

And in accordance with law, and an order of the Board  
of Trustees, made on the twenty-second day of March, 1867,  
so many shares of each parcel of said stock as may be  
necessary, will be sold at public auction, by Jones & Ben-  
dixen, at the office of the Secretary, corner Front and Clay  
streets, San Francisco, on the fourth day of June, 1867, at the  
hour of 12 o'clock M., of said day, to pay said delinquent  
assessment thereon, together with costs of advertising and  
expenses of sale.

N. C. FASSETT, Secretary.  
Office, northeast corner Front and Clay streets, San Fran-  
cisco. my11

**George Washington Gold and Silver Mining**  
Company.—Location of Works: Silver Mountain District,  
Alpine County, Cal.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the fifth  
day of April, 1867, the several amounts set opposite the  
names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Althoff, Geo.....	152	3	\$15 00
Althoff, Geo.....	163	1	5 00
Allison, John H.....	373	3	15 00
Blair, J. F.....	397	6	23 00
Brayton, J. G.....	402	10	50 00
Brewer, M. T.....	391	5	25 00
Buller, Henry.....	375 5-a	10	50 00
Bolta, J. H.....	387	10	50 00
Cook, A. J.....	393	10	50 00
Cong, J. B.....	394	10	50 00
Caldwell, M.....	169	10	50 00
Chapman, Mrs. M.....	17	1	5 00
Chapman, Mrs. M.....	238	2	10 00
Conn, M. R.....	329	12	60 00
Carmichael, A.....	328	10	50 00
Carmichael, A.....	338	5	25 00

And in accordance with law, and an order of the Board  
of Trustees, made on the fourth day of May, 1867, so  
many shares of each parcel of said stock as may be nec-  
essary, will be sold at public auction, at the office of the  
Company, by Jones & Bendixen, Auctioneers, on the 21st  
day of May, 1867, at the hour of 2 o'clock P. M. of  
said day, to pay said delinquent assessment thereon, to-  
gether with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mnt10

Names.	No. Certificate.	No. Shares.	Amount.
DeGraff, Wm.....	142, 143, 144, 145	60	\$300 00
Elde, Nelson.....	405	5	25 00
Genangel, Jacob.....	402, 403 5-a	10	50 00
Gilliam, John.....	73, 74 10 ca	20	100 00
Harris, D & Co.....	266, 267, 268	25	125 00
Herbert, Mrs. H.....	269, 389 5-a	25	125 00
Hastie, Robt.....	270	10	50 00
Hughes, James.....	179	2	10 00
Hughes, James.....	272	3	15 00
Hudson, David.....	1	5	25 00
Hudson, David.....	32, 43 20-a	40	200 00
Hudson, David.....	109	4	20 00
Jackney, H. W.....	353	6	30 00
Hayward, C. C.....	353	2	10 00
Iverson, Iver.....	154	2	10 00
Iverson, Iver.....	162	5	25 00
Johnson, Dennis.....	163	2	10 00
Johnson, Geo. W.....	148	3	15 00
Kather, Chas.....	414	10	50 00
Mintett, John.....	261, 262 5-a	10	50 00
McGee, James.....	78	5	25 00
Miller, John.....	182	5	25 00
Miller, J. E.....	406	15	75 00
Miller, Levi.....	231	6	30 00
Montgomery, R. F.....	65	3	15 00
Need, Jas. A.....	197	10	50 00
Nyrtet, Jas.....	327	10	50 00
Orrell, J. C.....	333	13	65 00
Nechelberg.....	161	3	15 00
McDonell, A. C.....	391	7	35 00
Phillips, W. L.....	276	10	50 00
Edenore, W. C.....	38, 39 3-a	10	50 00
Roberts, J. S.....	279	6	30 00
Risley, J. B.....	389	4	20 00
Risley, J. B.....	370	6	30 00
Shower, John.....	334	13	65 00
Springes, J. M.....	397	9	45 00
Silberstine, M.....	249	1	5 00
Stephens, Andrew.....	unissued	5	25 00
Tyler, Richard.....	168	10	50 00
Townsend, T. B.....	87	10	50 00
Vick, Jos.....	285	10	50 00
Vick, Jos.....	193	5	25 00
Vann, Matthew.....	161	2	10 00
Whitton, G. J.....	239	5	25 00
Wyckoff, J. D.....	274	10	50 00
Williams, Samuel.....	380	5	25 00
Williamson, John.....	330, 318, 319	25	125 00
Wilson, D. G.....	382	5	25 00
Wilson, D. G.....	383	5	25 00
Wolke, C. H.....	unissued	35	175 00
York, E. M.....	60, 61 2-a	4	20 00
York, E. M.....	62	4	20 00

And in accordance with law, and an order of the Board  
of Trustees, made on the fifth day of April, 1867, so many  
shares of each parcel of said stock as may be necessary  
will be sold at public auction, at the saleroom of Olney  
& Co., 418 Montgomery street, San Francisco, Cal., on the  
third day of June, 1867, at the hour of 12 o'clock M.,  
of said day, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

A. G. WOOD, Secretary.  
Office, 333 Montgomery street, San Francisco. mlt

**Lyon Mill and Mining Company, Kelsey Dis-**  
trict, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board  
of Trustees of said Company, held on the sixth day of  
May, 1867, an assessment of two (\$2) dollars per share was  
levied upon the capital stock of said Company, payable  
immediately, in United States gold coin, to the Secretary,  
J. M. Buffinton, 5 Government House, corner of Sansome  
and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the seventh day of June, 1867, will be sold as  
deemed delinquent, and will be duly advertised for sale at  
public auction, and unless payment shall be made before,  
will be sold on Saturday, the twenty-second day of June, 1867,  
to pay the delinquent assessment, together with costs of ad-  
vertising and expenses of sale. By order of the Board of  
Trustees.

J. M. BUFFINTON, Secretary.  
Office, No. 5 Government House, corner of Washington  
and Sansome streets. my11

**Notice.**—A meeting of the stockholders of the NEW-  
TON COPPER MINING COMPANY, will be held at the  
office of the Company, at the mine, in the County of Ama-  
dor, on TUESDAY, the eleventh day of June, A. D. 1867,  
at 3 o'clock P. M



**Big Blue Lead Gold and Silver Mining Company.**

Company, Cove District, Kern County, California.  
 Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the nineteenth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
Bailey, J. H.	157	5	\$2.00
Calvert, William	158	5	25.00
Calvert, William	159	5	15.00
Crabtree, O. L.	160	40	200.00
Crabtree, O. L.	161	10	50.00
Donnell, Wm. M.	162	5	15.00
Donnell, Wm. M.	163	1	5.00
Donnell, Wm. M.	164	2	10.00
Dowling, Mrs. E. N.	165	1	5.00
Dowling, Mrs. E. N.	166	1	5.00
Eggers, H. H.	167	15	75.00
Finley, F.	168	20	100.00
Finley, F.	169	5	25.00
Gatell, H.	170	5	15.00
Gatell, H.	171	3	15.00
Harazthy, A.	172	73	365.00
Harazthy, A.	173	10	50.00
Harazthy, A.	174	10	50.00
Hyatt, Caleb	175	3	15.00
Hyatt, Caleb	176	7	35.00
Hyatt, Caleb	177	10	50.00
Leisewitz, H.	178	64	320.00
Leisewitz, H.	179	15	75.00
Leisewitz, H.	180	20	100.00
Leisewitz, H.	181	20	100.00
Leisewitz, H.	182	18	90.00
Leisewitz, H.	183	31	155.00
Mollitor, A. P.	184	20	100.00
Mollitor, A. P.	185	20	100.00
Mollitor, George, in trust for A. P.	186	1	5.00
Noyes, L. E.	187	3	15.00
Newman, S.	188	3	15.00
Newman, S.	189	3	15.00
Selson, Peter	190	15	75.00
Park, H. D.	191	50	250.00
Parsons, Chas. A.	192	2	10.00
Peterson, Niel	193	6	30.00
Patton, H.	194	10	50.00
Rosary, Hyalith	195	10	50.00
Smith, R. H.	196	3	15.00
Tiehnler, D.	197	10	50.00
Uman, J.	198	10	50.00
Vallant, J.	199	10	50.00
Vallant, J.	200	18	90.00
Vogel, C. H.	201	15	75.00
Woodham, Oscar	202	10	50.00
Woodham, Oscar	203	20	100.00
Woodham, Oscar	204	20	100.00
Woodham, Oscar	205	21	105.00
Woodham, Oscar	206	22	110.00
Woodham, Oscar	207	24	120.00
Woodham, Oscar	208	91	455.00
Woodham, Oscar	209	25	125.00
Woodham, Oscar	210	13	65.00
Woodham, Oscar	211	5	25.00
Woodham, Joseph	212	29	145.00
Woodham, Alfred R.	213	25	125.00
Woodham, Luer A.	214	169	845.00
Woodham, Mary E.	215	25	125.00
Wolf, A.	216	10	50.00
Wilke, P. C.	217	10	50.00
Winn, Richard	218	5	25.00
Woodward, W. A.	219	35	175.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 315 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1867, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. G. ELMORE, Secretary.

Office, 315 Montgomery street, San Francisco. ap2

POSTPONEMENT.—The above sale is hereby postponed until Wednesday, the twenty-second day of May, 1867, at the same hour and place. By order of the Board of Trustees.

ap2 M. G. ELMORE, Secretary.

**Chilpanera Mining Company—District of Ures,**

Sonora, Mexico.  
 Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-eighth day of March, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
Enloe, J. F.	87	30	\$150.00
Moschler, Jos.	88	25	125.00
Moschler, Jos.	89	25	125.00
And in accordance with law, and an order of the Board of Trustees, made on the twenty-eighth day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of J. Middleton & Son, No. 404 Montgomery street, San Francisco, California, on the twentieth day of May, 1867, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.			

JOHN F. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. m4

**Chalk Mountain Blue Gravel Company.—Location of Works: Nevada County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, No. 5 Government House, corner Washington and Sansone streets, San Francisco, California. may4

**Cinco Senores Gold and Silver Mining Company.**

Copala, Sinaloa, Mexico.  
 Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 525 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.

Office, No. 525 Clay street, San Francisco. m4

**PATENT BUSINESS.**

We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent office in New York city, and having a faithful and reliable associate in Washington City, we are now better than ever before prepared to receive the claims of our applicants, in a careful, prompt and efficient manner. DEWEY & CO., Patent Solicitors. San Francisco, Jan. 1867.

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

**De Soto Gold and Silver Mining Company.**

Location of Works: Star District, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of April, 1867, an assessment of sixty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the Office of the Company, No. 24 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the first day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the nineteenth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN M. BURNETT, Secretary.

Office, No. 24 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, California. ap27

**Evoca Consolidated Copper Mining Company.**

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on THURSDAY, the twenty-third day of May, 1867, at 3 o'clock P. M., at No. 532 Merchant street, Room No. 3, San Francisco, California. By order of the President.

R. S. CLYDE, Secretary.

**Gold Quarry Company. Location of Works: Placer County, State of California.**

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 21st day of March, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
George Atwood	11	100	\$200.00
James Freeborn	12	50	100.00
And in accordance with law, and an order of the Board of Trustees, made on the 21st day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Cobb & Simon, auctioneers, at the office of the Company, 706 Montgomery street, (Room No. 4) San Francisco, Cal., on Monday, the thirtieth day of May, 1867, at the hour of 11 o'clock, A. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.			

T. W. COLBURN, Secretary.

Office Room No. 4, 706 Montgomery street, San Francisco, Cal. ap27

**Hope Gravel Mining Company.—Location of Works and Property: Grass Valley, Nevada County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of April, 1867, an assessment (No. 14) of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to David Davidson, at the office of the Company, No. 529 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twenty-second day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, No. 529 Clay street, San Francisco, Cal. my20

**J. X. L. Gold and Silver Mining Company.—Location: Silver Mountain District, Alpine County, Cal.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of April, 1867, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, in the store of J. G. Clark, No. 418 and 419 Clay street, San Francisco, Cal., or to John G. Slaven, Superintendent, at Silver Mountain.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. B. STEVENS, Secretary.

Office, 418 and 419 Clay street. m4

**Keystone Mining Company. Location of Works: Copper Canon District, Copperopolis, Calaveras County, California.**

Notice.—There are delinquent, upon the following described stock on account of assessment levied on the twelfth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
W. N. Coghill	156	50 1/2	\$252.50
J. H. Coghill & Co.	157	50 1/2	252.50
J. H. Coghill & Co.	158	37 1/2	187.50
J. H. Coghill & Co.	159	72 1/2	361.25
A. J. Coghill	160	5	25.00
A. J. Coghill	161	100	500.00
A. J. Coghill	162	100	500.00
A. J. Coghill	163	100	500.00
A. J. Coghill	164	100	500.00
A. J. Coghill	165	100	500.00
A. J. Coghill	166	100	500.00
A. J. Coghill	167	100	500.00
A. J. Coghill	168	100	500.00
A. J. Coghill	169	100	500.00
A. J. Coghill	170	100	500.00
A. J. Coghill	171	100	500.00
A. J. Coghill	172	100	500.00
A. J. Coghill	173	100	500.00
A. J. Coghill	174	100	500.00
A. J. Coghill	175	100	500.00
A. J. Coghill	176	100	500.00
A. J. Coghill	177	100	500.00
A. J. Coghill	178	100	500.00
A. J. Coghill	179	100	500.00
A. J. Coghill	180	100	500.00
A. J. Coghill	181	100	500.00
A. J. Coghill	182	100	500.00
A. J. Coghill	183	100	500.00
A. J. Coghill	184	100	500.00
A. J. Coghill	185	100	500.00
A. J. Coghill	186	100	500.00
A. J. Coghill	187	100	500.00
A. J. Coghill	188	100	500.00
A. J. Coghill	189	100	500.00
A. J. Coghill	190	100	500.00
A. J. Coghill	191	100	500.00
A. J. Coghill	192	100	500.00
A. J. Coghill	193	100	500.00
A. J. Coghill	194	100	500.00
A. J. Coghill	195	100	500.00
A. J. Coghill	196	100	500.00
A. J. Coghill	197	100	500.00
A. J. Coghill	198	100	500.00
A. J. Coghill	199	100	500.00
A. J. Coghill	200	100	500.00

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by John Middleton & Son, No. 404 Montgomery street, San Francisco, California, on the twentieth day of May, 1867, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

O. P. SUTTON, Secretary.

Office, 440 California street, San Francisco. may4

OLNEY & CO., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. no10

**Illegal Supplemental Advertising.**—It would be well for Mining Companies, whose advertisements are repeatedly appearing in the Supplements of daily papers, to inquire into the legality of that class of advertising.

**Lady Franklin Gold and Silver Mining Company.**

Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1867, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 305 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. R. LUTY, Secretary.

Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. my4

**North Star Gold and Silver Mining Company.**

Reese River Mining District, Lander County, Nevada.

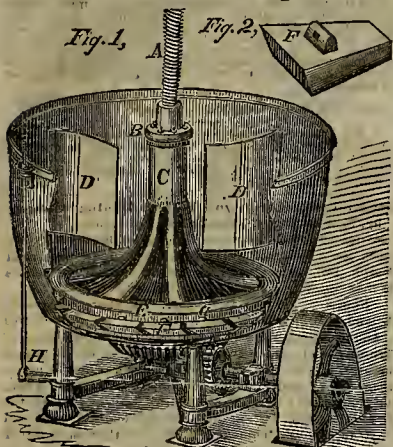
Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fourteenth day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Samuel Haus	144	1	5.00
Chas J Dwyer	145	8	38 75
Geo H Faulkner	523	5	25.00
Oliver Ames	456	50	250.00
Oliver Ames	458	50	250.00
Oliver Ames	459	50	50.00
Oliver Ames	460	50	50.00
John Kurtz	457	1	5.00
Cyrus Latrop	461	20	100.00
Jerome W Tyler	462	10	50.00
Jerome W Tyler	463	10	50.00
Jerome W Tyler	464	10	50.00
Jerome W Tyler	465	10	50.00
Jerome W Tyler	466	10	50.00
Jerome W Tyler	467	10	50.00
Jerome W Tyler	468	10	50.00
Jerome W Tyler	469	10	50.00
Joe C Tyler	470	10	50.00
Joe C Tyler	471	10	50.00
Joe C Tyler	472	10	50.00
Joe C Tyler	473	10	50.00
Joe C Tyler	474	10	50.00
Joe C Tyler	475	10	50.00
Joe C Tyler	476	10	50.00
Joe C Tyler	477	10	50.00
Uani Blaisdell	478	8	40.00
John Keyes	479	20	100.00
J J Goodrich	480	12	60.00
J J Goodrich	481	25	125.00
J J Goodrich	482	25	125.00
J J Goodrich	483	25	125.00
J J Goodrich	484	25	125.00
J J Goodrich	485	10	50.00
J J Goodrich	486	20	100.00
J J Goodrich	487	10	50.00
J J Goodrich	488	20	100.00
J J Goodrich	489	5	25.00
J J Goodrich	490	25	125.00
J J Goodrich	491	5	25.00
J J Goodrich	492	5	25.00
S X Goodrich	591	40	200.00
Thos Dalby	493	5	25.00
Thos Dalby	594	10	50.00
Thos Dalby	595	10	50.00
Thos Dalby	596	50	250.00
Wendell Phillips	497	10	50.00
Wendell Phillips	498	10	50.00
Wendell Phillips	499	50	250.00
Wendell Phillips	500	45	225.00
Clark C Walworth	505	6	30.00
Clark C Walworth	506	6	30.00
J H Stephenson	502	50	250.00
J H Stephenson	503	50	250.00
J H Stephenson	504	50	250.00
J H Stephenson	505	40	200.00
M S Seudder	507	5	25.00
M S Seudder	508	6	30.00
Geo Osgood	509	5	25.00
Geo Osgood	510	25	125.00
Geo Osgood	511	6	30.00
Geo Osgood	512	5	25.00
Geo Osgood	513	5	25.00
Geo Osgood	514	25	125.00
Geo Osgood	515	5	25.00
Geo Osgood	516	5	25.00
Washington Warren	517	50	250.00
Washington Warren	518	5	25.00
Washington Warren	519	10	50.00
Washington Warren	520	10	50.00
Geo B Neal	521	25	125.00
Geo B Neal	522	5	25.00
Wm T Reynolds	523	1	5.00
Simon Aron	527	168	840.00
Simon Aron	528	12	60.00

And in accordance with law and an order of the Board of



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference, as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY,  
San Francisco.

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco.  
23 1/2 St.

## FOR SALE!



PATENT RIGHT OF HUNT'S WINDMILL for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes, Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

E. O. HUNT,  
29 SECOND STREET,  
San Francisco.

## DUDGEON'S

PATENT

## Hydraulic Lifting Jacks

AND

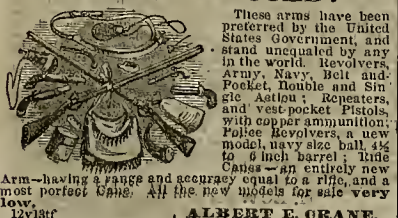
## BOILER PUNCHES,

15 1/4 Eighth street, cor. Minna. qr.

## REMINGTON'S ARMORY.

Agency, 310 Washington St., San Francisco.

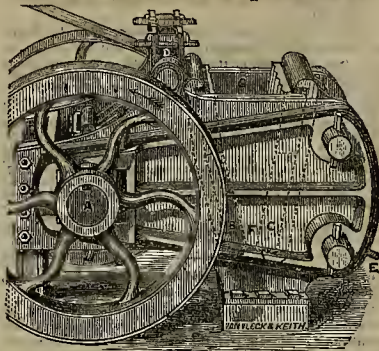
## PRICES REDUCED!



These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition. Police Revolvers, a new model, heavy size ball, 4 1/2 inch barrel, 1 1/2 Cal. — an entirely new arm—having a range and accuracy equal to a rifle, and a most perfect game. All the new models for sale very low.

ALBERT E. ORANE.

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machinery for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, it is a desideratum, and has been for these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600

No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour—price, \$850

No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour—price, \$1,200

EXPLANATION OF THE ABOVE ENGRAVING. The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, U, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county: "Rawhide Ranch, Tuolumne Co., Sept. 28, 1885. "JAMES BRODIE, San Francisco.—My dear Sir: I give me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, Supt. Rawhide Ranch Quartz Mill."

BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL. This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1884. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel are hereby informed that on and after the 1st of November, 1886, the royalty charged for using the same will be valued to the sum of \$100 per Barrel.

The following explanation of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1885.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR RY CRUSHING. This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1885.

BRODIE & RADCLIFF,  
Express Building, 402 Montgomery street,  
San Francisco.

## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. C shows the valve in the closed position, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at D.

The advantages claimed for this Valve are: 1. Cheapness of construction. 2. Greater durability. 3. A tripping action from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, are for sale by

120 Front street, San Francisco.

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

See illustration and description of this pump, published every other week in this paper.

## Notice to Miners,

## Well-Borers and Water Companies.

M. FRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pines in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

5 1/2 St. Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077

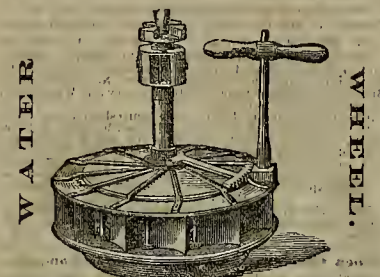
3 1/2 St. SAN FRANCISCO.

## To the Mining Community.

THE UNDESIGNED, WHO HAS HAD THIRTY YEARS

constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 501 Harrison street, San Francisco.

WILLIAM WILLIAMS,  
Practical Mining Engineer.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, and all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

CALIFORNIA REFERENCES.—E. Stockton, Folsom; O. Simmons, Oakland (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McKim, Lexington, Santa Clara County. Send for Circular to

KNAPP & GRANT, Agents for California.

25 1/2 St. 310 Washington street, San Francisco

## HUNTER'S

## Eureka Amalgamator!

FOR WORKING THE SANDS AS THEY PASS FROM the battery. The coarse particles of sand are reduced to pass through a No. 6 screen that would pass through a No. 5 in the battery; the fine flour gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The machine is four feet eight inches square on the bottom, and covered with iron dies 1/2 inches thick by four inches wide, extending across the bottom with alternate strips of wood on end of the same width. The rubbers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between the rubbers. The box is also lined with copper plates. The machine is set in operation by eccentrics, giving an oscillating motion, and the rubbers are suspended on iron hangers, and adjusted by set screws. One-fourth of a horse-power is sufficient to run one machine of ten tons capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from W. W. WATT, Esq., of the Eureka Mill, will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is from rock that pays \$80 per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I have ever used. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it; but the best recommendation I can give is that I will use it. Will you please go to the Vulcan Foundry and order them."

On the first of April I had an order for two more, for the Pittsburg Company at Nevada City.

The prices for all the machinery made, and dies and wood set in the bottom, and all the iron complete, is \$275. The weight is about one ton with cast iron box; but to save freight, the box can be made of boiler iron, saving 500 pounds weight.

Orders sent to the Vulcan Foundry, the Union Foundry, or the Fulton Foundry, First street, will be promptly attended to.

ANDREW HUNTER, Patentee.

P. S.—Patent allowed.

## HUNTER'S

## IMPROVED CONCENTRATOR.

THE INVENTOR OF THE ABOVE RECENTLY IMPROVED Machine, is now prepared to take contracts for concentrating all kinds of ores on shales, receiving a certain per cent. of the sulphurates as may be agreed upon, and will guarantee twenty per cent. more sulphurates than from any rock or concentrator built on the Pacific coast, saving at least thirty per cent. of the sulphurates contained in the ore. The sulphurates, if desired for shipping, will contain less than one per cent. of sand.

25 1/2 St. The above machine can be seen in operation at the Union Foundry, in this city, up stairs.

14 1/2 St.

## To Quartz Miners and Others!

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER.

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurates, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject examine it. Patent applied for.

14 1/2 St. JAMES HITCHENS.

## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double miller and rollers, and is the best in the market.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by

22 1/2 St. O. W. STRONG, Assayer.

## NELSON &amp; DOBLE,

AGENTS FOR;

## Thomas Firth &amp; Sons' Cast Steel Files,

Etc., Shear, Spring, German, Plow, Bilster and Roe Calk Steel, manufacturers of

Mit Pickers, Sledges, Hammers, Picks, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools, 319 and 321 Pine Street, Between Montgomery and Sansome, San Francisco.

14 1/2 St.

## V. CUSHING, Agent

## For the Purchase and Shipping of Machinery

## OF ALL KINDS.

ESPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. I am prepared to execute orders, and give my personal attention to the execution of orders. I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco.

8 1/2 St.

By Express.—Two cents per copy will be added to our usual rates of subscription to pay Wells, Fargo & Co's tariff on papers sent by express. If connecting expresses in the interior make additional charges, subscribers must themselves settle the same.

[Written for the Mining and Scientific Press.]

## Southeastern Nevada.

BY J. D. EMERSON.

REVELLE DIST., Nye Co., April 12.

EDITORS PRESS:—The prospects of this district never were half so encouraging as at the present time. The Fisherman ledge had a slight break in it a week or two ago, and then the croakers and weak-elbowed fraternity infesting every mining camp gave utterance to their prophetic conceptions. They knew long ago that the ledge was of no account—that it would be dug out by the roots, and that the district did not contain a single mine of value. But the horse is now of another color—the far-seeing gentlemen tell us they knew from the first that the mines were of great value, and all that was required to convince every one of the fact, so long ago evident to them, was well-applied labor. When will men professing to have common sense see the absurdity of pretending to know more about undeveloped mines than the common miners themselves? If they will only let Nature be their teacher, they will be learning every day, and the longer they live, be the less disposed to boast of the trifling knowledge they possess.

The vein in the Fisherman is now from four to five feet wide, and the ore, with scarcely any assortment, will give a pulp assay of \$500 per ton. It pitches easterly, at an angle of about sixty degrees, and shows the most compact body of high-grade ore ever seen in any mine in the State. I have seen the Comstock, the Murphy, the Twin Ophirs, the Buckeye and the Silver Bend mines, but the Fisherman to-day is of far greater promise, as a mine of inestimable value, than any one of those when it was in the same stage of development. I mentioned, in a former notice of Reveille District, that the formation was granite and feldspathic porphyry, capped by an unstratified limestone of varying thickness. The developments recently made in quite a number of claims afford conclusive proof that the best lodes are on the western side of the belt, in or near a black calcareous slate, by which it is bounded on that side. Sometimes the ledges cut the slate at right angles, and rarely is a location found of any value, except for the small amount of rich surface ore it yields, if it runs in the same direction as the slate. Whenever a vein in this formation, having a rich mineral on the surface, has been worked upon, it has been found to go down and keep its width and high grade of ore. The ledges, on the other hand, which are found in the deep limestone, are imperfectly defined, and almost invariably pinch out; or if they still show quartz, it is, in a great measure, barren. Until the true bed-rock underlying the limestone is penetrated, such claims are not likely to be found reliable, and to open them to this depth will cost a considerable amount of money. There can now be no doubt whatever of the extraordinary value of about a dozen mines in the district, from any one of which quantities of ore can be extracted which will yield from \$300 to \$700 per ton. A large amount of work will be done during the next six months, and before another year goes round there will be more first-class silver mines in the district, partially opened, than are to be found in any other section of the State. We need more good miners, and as the wages are \$3 to \$4 per day in coin, with board, we are living in the hope that when the roads over the mountains are good, we shall induce mining skill and muscle to come from California to our assistance. Reveille is distant from Austin only about 130 miles, over a good road. The climate is excellent, and the country is not by any means fully prospected; so that, in his leisure time, every miner has a chance of finding a good mine for himself and his friends. As yet there is but a five-stamp mill in the District, and that is not capable of doing good work. There is a probability, however, of a well appointed twenty-stamp mill being built during the summer and early fall.

EXPANSION AND CONTRACTION.—During the recent hot weather, the draw on Long Bridge was found, in the middle of the day, so tightly closed as to be immovable; but at evening loose again. The longitudinal expansion of the iron rails was sufficient to cause this, and their ends were accordingly cut off.



"MISFORTUNES NEVER COME SINGLY."—An English magazine says that mining accidents have, from the earliest recorded instances, occurred in twos, and gives the following instances as proof: "In March, 1776, 10 men were killed at the Walker colliery in the north, and a week afterward 39 were destroyed at Fatfield. On December 6th, 1773, several persons were killed at a colliery near the Wear, and two days afterwards 28 lost their lives at Chater's Haugh in the same district. In June, 1794, 30 victims were the result of an explosion at Rickelton pit, near Picktree; and within two days 28 more were killed at Harratou. In October, 1799, 39 men were killed at Lumley, and the bodies of the poor fellows were never recovered. In October, 1805, 35 men were killed at Hebburn, and in November, 38 at Oxclose. On September 28th, 1813, there was an explosion at Hall pit, Fatfield, by which 32 persons were killed; and in December of the same year 22 lost their lives at Felling from a similar accident. On the 24th June, 1815, Success pit, Newbottle, exploded and 57 people were killed; and on the 27th, Sheriff Hill pit exploded, causing the destruction of 11. On October 19th, 1821, another pit at Newbottle exploded, and two persons were killed by the explosion; and on the 23d, 52 were killed by a similar misfortune at Wallsend.

Insects damage crops every year to the extent of \$300,000,000; enough to give every man a farm.

### MELLVILLE C. KEITH, M. D.

Homeopathic Physician,  
No. 26 Montgomery st., opposite the Lick House, (Room 12),  
SAN FRANCISCO.  
Devotes special attention to CANCER, PARALYSIS and  
CHRONIC DISEASES. Consultation free.  
15-13 6mtr

### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press, or address DEWEY & YACHT, Mountain Messenger office, Downsville, Sierra County, Cal. 7v111f

### WOODWARD'S GARDENS!

#### MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

#### Open Every Day!

##### ADMISSION:

To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

—OF—

### Illuminating, Lubricating, —AND— PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 23v13m19 414 Front street, San Francisco.

### California Steam Navigation



Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.  
Office of the Company, northeast corner of Front and Jackson streets.

JOHN BENCHLEY,  
President.

### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

Fig. 1.

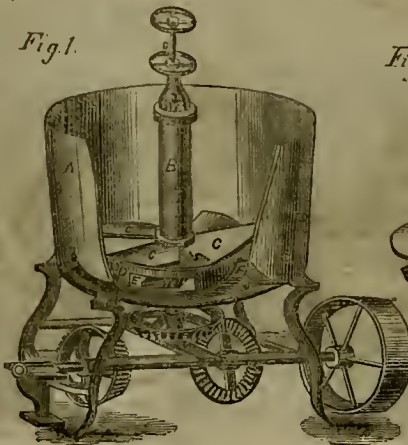


Fig. 2.



For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

Stair Work of all Kinds,

MADE TO ORDER

And Shipped to all parts of the Coast.



On Hand and for Sale.

Novel Posts and Railstons

CONSENTLY

### PACIFIC POWDER MILL

COMPANY'S

### BLASTING POWDER!

MANUFACTURED

IN MARIN COUNTY,

CALIFORNIA.

FOR SALE BY

HAYWARD, COLEMAN & CO.,

AGENTS,

414 Front Street, San Francisco. 3v14-1m

### PACIFIC BILLIARD TOURNAMENT.

Open to all Players on the Pacific Coast.

A GRAND BILLIARD TOURNAMENT FOR THE CHAMPIONSHIP of the Pacific Coast will take place at

Congress Hall, San Francisco, On the 16th, 17th and 18th days of May next.

First Prize—A splendid GOLD MOUNTED CUE and the CHAMPIONSHIP.  
There will also be four other prizes in cash, ranging from one hundred dollars up.

The New York American Billiard Players' Association's rules will be strictly adhered to in this contest.

A Committee of Billiard Players will be appointed to regulate the details of the Tournament.

Gentlemen wishing to participate in the contest will please communicate with

STRAHLE & HUGHES, 567 Market street, San Francisco. 16-14-1m

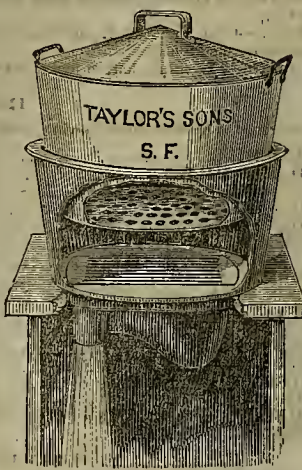
### Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 234 Sacramento street, opposite What Cheer House, San Francisco. 10v14-ly

### Just Published.

THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS of the Nervous System and Reproductive Organs, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-ly

### HEALTH! HEALTH!



No more Typhoid, or other Deadly Fevers

Contracted by inhaling the Noxious Gases of Sewers and Cesspools.

To prevent this, purchase one of Taylor's Stench Traps and Garbage Baskets.

And promote the health, comfort and cleanliness of your family. [For description see Mining and Scientific Press, April 6, 1897.] Sold wholesale and retail by TAYLOR & SONS, at No. 429 Pacific street, San Francisco. 15v14H

### SAN FRANCISCO BRUSH FACTORY, BRUSHES.

No. 211 California st., manufactures to order all kinds of brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fibers; also, Sluice Brushes from the same material. The Patent Rattan, Street, Stable, Flue and Plume Brush, for which they have the exclusive right for the Pacific Coast.

All orders from the interior promptly executed. FELDMAN, SIMPSON & CO., Proprietors. 10v14qr

### ROWLAND, WALKER & CO.,

GROCERS,

Nos. 516 and 518 Washington street,

Are offering a complete assortment of GROCERIES at the LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits. 22v13-ly

### Portable Steam Engines!

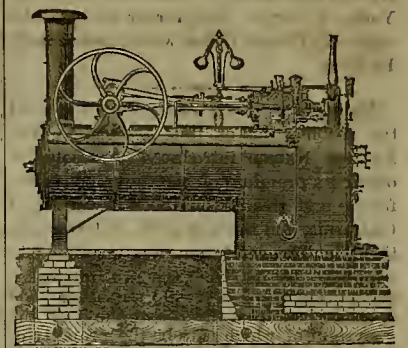
"Hoadley's" and "Hittinger's" Make,



HOADLEY'S.

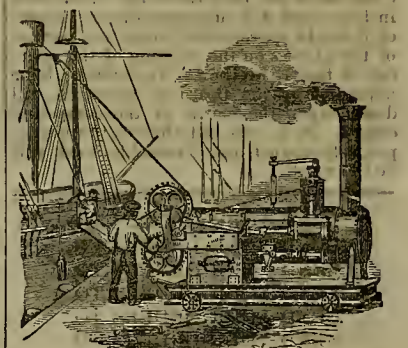
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

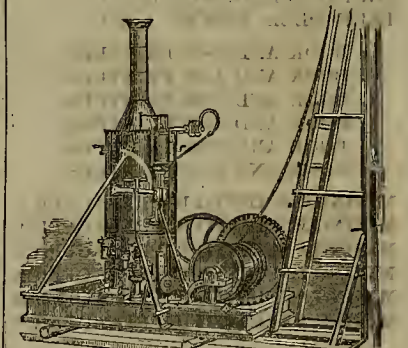
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.

Steam can be put up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises) in fact, the portable principle is the power's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

All sizes on hand from 3 to 30 horse power, with and without cranes.

Also, Portable Saw and Grist Mills.

For sale by TREADWELL & CO., 9v14 6m15p Corner of Front and Market streets.



**MURDER IN ARIZONA.**—A most unprovoked murder was committed on the night of April 20th, at Callville. The victim was Mr. Jefferson Hartman, who has been for some time acting as deputy postmaster of El Dorado Cañon, in place of Mr. Frank S. Alling, who has been for several months in this city. Mr. Hartman had been to the Muddy Settlements, seventy miles north of El Dorado Cañon, and returning stopped at Callville to spend the night. In the morning he was found dead, his body pierced by nine buckshot. He was no doubt murdered either by the friends of a desperado, in whose capture he had aided a few days previously; or by a soldier, whom he had suspected of robbing him a short time previously of \$150. The soldier has not been seen since the murder, a circumstance tending to fix the crime more particularly on him. Mr. Hartman was a gentleman in excellent repute, who had won the esteem of all good men, and particularly of the officers at Fort El Dorado, with whom he associated. He was aged about 29 years, and was a New Yorker by birth. His murder has created a void in El Dorado Cañon which cannot easily be filled.

**MECHANICS' INSTITUTE—PREMIUM.**—At the last meeting of this Association, Mr. Edward Nunan introduced a resolution offering a premium of one thousand dollars for the best treatise on the "Resources of California, and the best mode of developing them." The resolution was unanimously adopted. By its terms, the Institute makes an appropriation of \$500; the other \$500 to be derived from the sale of the book, the copyright of which is to be the property of the Association. It is also proposed, although not yet determined upon, to offer a further premium of \$300 for the second best treatise. The work is to be ready for distribution at the next Industrial Exhibition in 1868; and it is suggested that a synopsis of it would appropriately serve as a portion of the address on the occasion of the opening of that Exhibition. A committee, to be appointed by the Board of Directors, will decide upon the merits of the competing essays. It is believed that if the idea is properly carried out, a valuable work will be the result.

SEND YOUR ORDERS TO  
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• **O. P. Truesdell**, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 505 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.  
TRUESDELL, DEWEY & CO.  
San Francisco, April 15, 1867.

**CHICKERING & SONS'**  
**PIANO FORTES**  
Never fail to stand any climate.  
The only Perfect Pianos  
They lead in all valuable improvements—all others follow.  
Agents: KOHLER, CHASE & CO.,  
421 Montgomery street, bet. California and Sacramento.  
1y10y14n1r1p

## HENDY'S LATEST IMPROVED CONCENTRATORS,

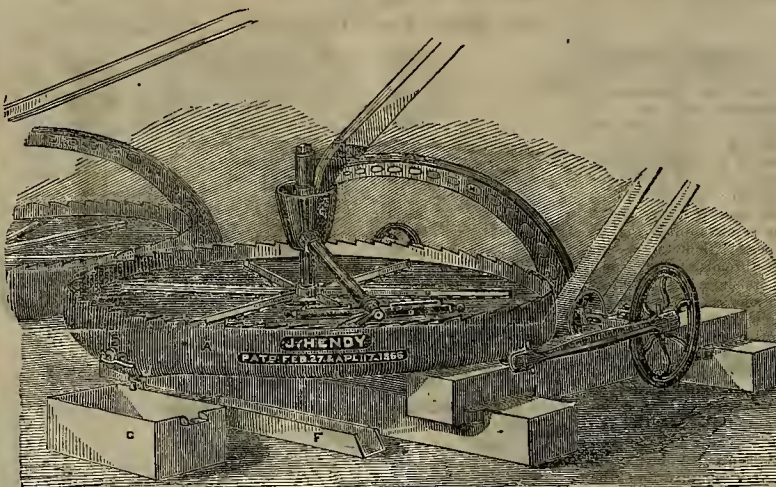


FIG. 1.

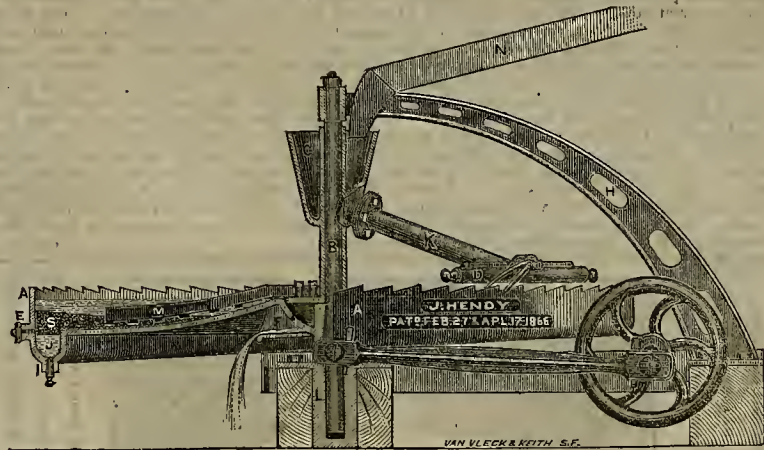


FIG. 2.

### FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

#### Directions for Operating Hendy's Concentrators:

- First—The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
FIRST—Set the Pan, A, level, by its inner rim.  
SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

#### References:

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:

EMPIRE MILL.....	Grass Valley, Nevada County.
GOLD HILL MILL.....	Grass Valley, Nevada County.
CONEY & BIGELOW MILL.....	Jackson, Amador County.
SPRING HILL MILL.....	Amador, Amador County.
GOLDEN GATE MILL.....	Valeano, Amador County.
OPHIR MILL.....	Placer County.
C. H. SCHNABER'S MILL.....	Doty Flat, Placer County.
GOLDEN RULE MILL.....	Stewart Flat, Placer County.
BENTON MILL.....	Bear Valley, Mariposa County.
LOUISIANA MILL.....	Coulterville, Mariposa County.
RAWHIDE RANCH MILL.....	Jamestown, Tuolumne County.
PEOPLE'S MILL.....	Alleghany, Sierra County.
TYRON & CO'S MILL.....	Prescott, Arizona.
WOOLSEY & CO'S MILL.....	Prescott, Arizona.
NOYES & CO'S MILL.....	Prescott, Arizona.
GUADALUPE & SACRAMENTO G. & S. M. CO.....	Sinaloa, Mexico.
TRIUNFO G. & S. M. CO.....	Lower California.

And in use in many other parts of this coast.

For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

#### Remarks:

Many Concentrators have been gotten up in this city. Some of these claim foreign origin; others are of home production. The sonorous Greek names, with which some of these have been dignified, ought, it would seem, to have entitled them to a better fate than that which has befallen them. A large proportion of these machines are now "numbered among the things that were." A few were still-born; never having had an existence except in the shape of advertisements and cuts, prematurely prepared by their too confident projectors. For one of these it was claimed, with a grand flourish of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order or in the way." Unfortunately, however, although it had a reasonable supply of legs, it obstinately refused to run. Amputation failed to remedy the defect, and it now lies forgotten among a heap of old iron,—a mechanical abortion.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works, for 1866, pages 51, 53.

#### CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.  
March, 1867.

**W. T. GARRATT,**  
City  
**BRASS AND BELL FOUNDER**  
Cor. Mission and Fremont sts.  
SAN FRANCISCO.  
Manufacturer of Brass, Zinc, and Anti-Friction or, Babbet Metal Castings;  
CHURCH AND STEAMBOAT BELLS.  
TAVERN AND HAND BELLS AND GONGS,  
FIRE ENGINES, FORCE AND LIFT PUMPS,  
Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles, HYDRAULIC PIPES AND NOZZELS  
For Mining purposes, Iron Steam Pipe furnished with fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."  
Highest Market price paid for OLD BELLS, COPPER AND BRASS.

### Foundry for Sale.

A One-half Interest in the  
**UNION IRON WORKS,**  
SACRAMENTO,  
Owned by William R. Williams, is offered for sale on the most favorable terms.

#### A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 85 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address  
WILLIAM R. WILLIAMS,  
Sacramento, Cal.

### Pacific Mail Steamship Co's STEAMSHIPS FOR NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M., of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.  
On the 10th, 19th and 30th of each month that has 31 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 18th or 19th connect with French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates as given below:  
May 18th—MONTANA.....Capt. Jos. Sutton,  
Connecting with ARIZONA, Capt. Harris.

May 30th—SACRAMENTO.....Capt. J. M. Caverly,  
Connecting with OCEAN QUEEN, Capt. Muury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.  
An experienced surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines can be obtained at the office of the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARGO & CO.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.



### MAURICE DORE & CO.,

Real Estate, Stock and General Auctioneers,  
Office and Salesroom, 327 Montgomery st.  
H. A. COBB, Auctioneer.

#### Guardian's Sale of Real Estate.

NOTICE IS HEREBY GIVEN, THAT IN PURSUANCE of the order of the Probate Court of the City and County of San Francisco, in the State of California, made on the 25th day of January, A. D. 1867, in the matter of the guardianship of the person and estate of Bertha Louisa Washburn, a minor, the undersigned, Guardian of the person and estate of said minor, will sell at public auction, to the highest bidder, for cash, in separate parcels and subject to confirmation by said Probate Court, on SATURDAY, the 25th day of May, A. D. 1867, at 12 o'clock M., at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, in said City and County, all the right, title, interest and estate of said minor in and to each of those lots, pieces or parcels of land situate, lying and being in the said city and county, and described as follows, viz:

PARCEL No. 1.—Lot on the west side of Stockton street, commencing 96 3/4 feet north of Jackson street; thence north 20 feet 7 1/2 inches, by a depth of 93 1/2 feet.

PARCEL No. 2.—Lot on the east side of Stockton street, commencing 87 1/2 feet north from N. E. corner of Stockton and Greenwich streets; thence north 50 feet, by a depth of 137 1/2 feet.

PARCEL No. 3.—Lot on S. W. corner of Sacramento and Gustavus streets, 60 feet front on Sacramento street by 77 1/2 feet deep on Gustavus street.

Terms and conditions of sale—Cash, to be paid on the day of sale.

Guardian of the person and estate of said minor,  
San Francisco, May 4th, 1867.

E. H. WASHBURN

18v14-3w



# Mining and Scientific Press.

Terms: One Year, \$5; Six Months, \$3.

Single Copies, Fifteen Cents.

A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, MAY 18, 1867.

VOLUME XIV.  
Number 20.

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Golds—An Imitation of Gold: Preparing Oxygen Gas: Hydrophobia: Influenza: Antimalarials in Snow: Grubb's Reflecting Telescope: The Point of Absolute Gold: Sensitive Flame: Expansion Due to the Galvanic Current: Daubree's Decomposing Polarizer: New Source of Tannin: A New Alkaloid: Electricity on Gilded Threads.  
MINING SUMMARY.—Embracing late intelligence from the various counties and districts in California, Arizona, Idaho, Colorado, Montana, Oregon and Nevada.  
San Francisco Market Rates.  
San Francisco Weekly Stock Circular.  
Stock Prices—Bid and Asked.  
Mining Shareholders' Directory.  
Mining Stock Sales of the Week.

## Contributed for Our Cabinet.

Under this heading we shall continue to mention and describe, according to merit, such specimens of ore, minerals, fossils, curiosities, etc., as may be presented, or forwarded to us by mail or express, prepaid. Each article will be numbered and placed in our cabinet, and recorded with the name of the donor, and the claim or location from whence it came.

P. S. Jastram furnishes us with several specimens of ore from the Hamp. Williams mine at Kelso, fifteen miles east of Havilah. Several prospecting shafts have been sunk on this mine from fifty to eighty feet in depth. A tunnel is now being run to strike the vein at a depth of 120 feet. A twelve-stamp mill has just been received on the ground, and will be put up immediately. The gold from this mine assays \$11 per ounce. We have numbered these specimens as follows:

153 and 154 are said to be fair samples of the ore, which is of a very peculiar character, resembling a friable granite in a state of disintegration, rather than a quartz vein. Massive pieces of quartz, however, are sometimes found, and often rich in gold. Number

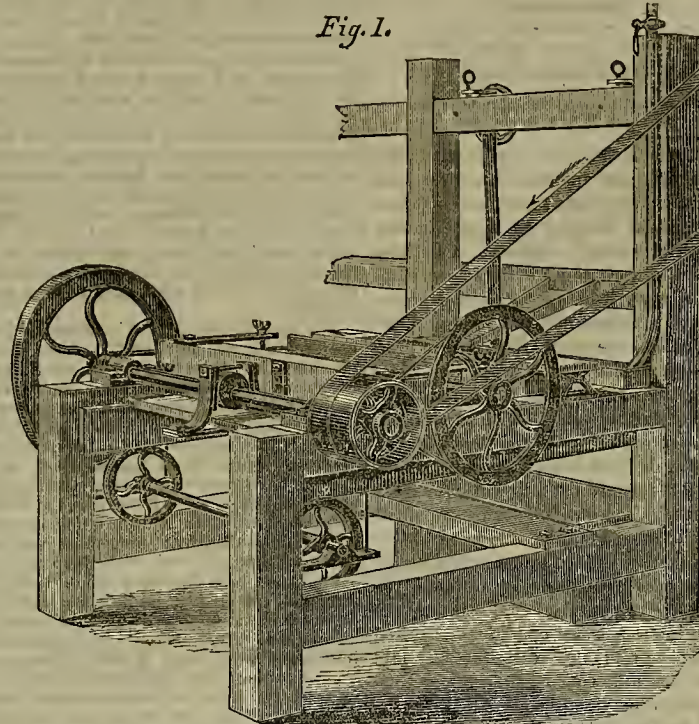
155 is probably a small specimen of that character, which has been broken out from this or some other vein, and became water-worn. It shows considerable free gold scattered over its surface. Such specimens are frequently found in this vicinity.

## Hunter's Improved Concentrator and New Amalgamator.

### CONCENTRATOR.

The illustration annexed (Fig. 1) is a correct view of Hunter's Improved Concentrator. The tables at the back are suspended on iron hangers; the first or lower end rests on iron rollers. They weigh about thirty pounds each, and vibrate at the slightest touch. They originally weighed over 100 pounds. The lower end of the table strikes against a steel spring, thus producing a percussion that moves the sulphurets over the highest portion of the table, while the sand and water pass off in front. The feed trough rests on rockers on the frame, and is moved by a crank pin in the end of the driving shaft. The driving shaft is placed in front of the table, thus giving free access to the machine.

In operating the machine, the sand is run into grading boxes—by which it is separated into three different grades. Each grade is run upon a table adjusted to its particular grade. The machines, as now constructed,



HUNTER'S CONCENTRATOR.

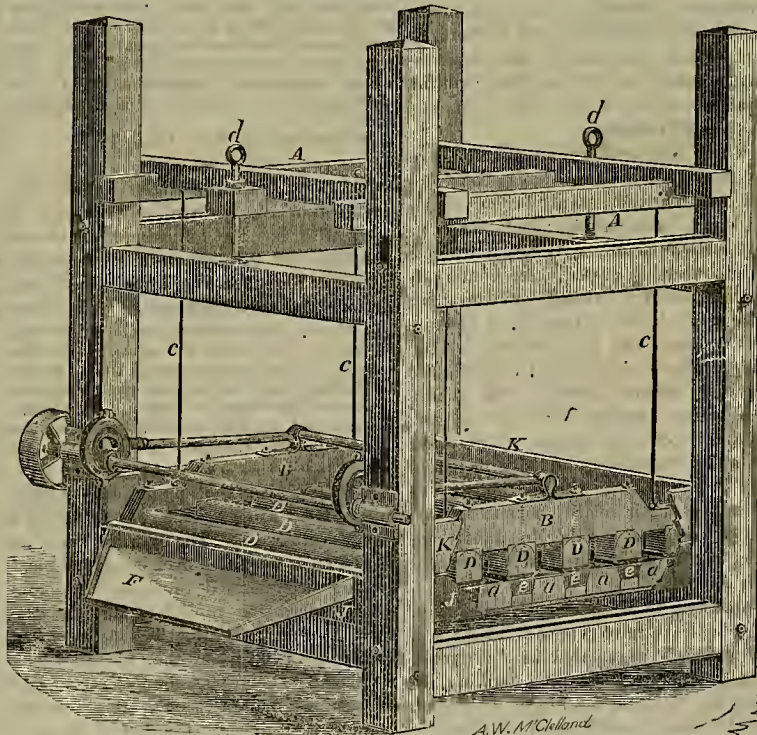


Fig. 2—HUNTER'S AMALGAMATOR.

require but very little attention; two or three tables can be laid in one frame, and driven by one belt and shaft.

### AMALGAMATOR.

Figure 2 is a view of Hunter's amalgamator, which, as now constructed, is four feet eight inches square. The pan, J, is made of cast or boiler iron, seven inches

deep, the sides lined with wood, K, one foot deep, with inside lining of copper plates. The bottom is covered with iron dies, e, e, e, four inches wide, with strips of wood, a, a, a, alternating with the iron dies. The rubbers, D, D, D, made of wood, four inches wide and three and three-quarters thick, bolted to cross-piece, B; the upper part of the rubbers

are rounded and covered with copper plates; the bottoms are shod with iron. The discharge end, F, is level with the top of the rubbers.

The machine is operated by means of a shaft and eccentrics, which makes sixty revolutions a minute, causing 120 backward and forward movements of the rubbers. The beneficial action of "rubbing," in the amalgamating process, is too well understood to need any further remark in this connection. The machine also works as a grinder, and is arranged with a steam chest for heating the pulp. It has also been used as a settler with the most satisfactory results. There are five of these machines now running at the Eureka mill, Grass Valley, where they are most highly approved of by Mr. Watt, the superintendent, and one of the most judicious and skillful millmen in California. Further information may be had of these machines by addressing A. Hunter, San Francisco, or by calling at the Fulton Foundry, No. 45 First street.

**PUSHING AHEAD.**—The work of the Central Pacific Railroad on the Truckee river is being pushed ahead rapidly. Fifteen miles of track will be laid from the State line toward Donner Lake in the course of two months. This will bring the rails within about ten miles of Donner Lake, and it is thought now that the gap between that point and Summit Valley will be filled by the first of November. They expect to complete the main tunnel at the Summit by the first of September next, one year from the commencement. The tunnel will be 1,700 feet long. The speed with which this tunnel is being pushed ahead is without parallel in the history of any similar work, at any place or any period.

**A CALIFORNIA INVENTION ABROAD.**—The circular movable saw-teeth, for circular saws, an ingenious device, invented by Mr. Warren P. Miller, of this city, and first illustrated in the MINING AND SCIENTIFIC PRESS, is meeting with extraordinary favor among millmen at the East. It has been recently illustrated in the *Scientific American*. A factory for their manufacture has been established in Philadelphia. The inventor is likely to realize a handsome fortune as the result of his ingenuity.

**WELL REPRESENTED.**—Colorado sends two hundred and sixty specimens to the Paris Exposition. This includes maps, photographs, etc., etc. Nearly two hundred and fifty lodes are represented.

The size of farms in California has decreased from an average of 4,066 acres to 300. This is one of the most hopeful signs of the times for the future growth and progress of this State.

**U. S. BONDS.**—We have received from Messrs. Belding, Keith & Co., London, a pamphlet giving a set of tables and convenient method of calculating exchange and converting United States Bonds into English currency, etc.

The Ensley Gas Company are erecting gas works at Vallejo. The site chosen is near the water, in front of the United States Hotel.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION, of San José acknowledges receipt of the Press. Its members are earnest in their work.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 290.]

## MAMMOTH DISTRICT.

On the twenty-fourth day of December, 1863, Jas. Daley and R. V. Craig, then at Lone, met a Piute Indian, who, in consideration of a pony, promised to pilot them to richer and wonderful mines in the range of mountains opposite. They started in a due west direction, and on the following day (Christmas) camped at the spring in what is now the little town of Upper Weston. Here, indeed, they found, as their guide had promised, quartz in abundance. On exploring the hills below, they discovered a belt of coarse feldspathic granite, nearly a mile wide, in which occurs innumerable veins of quartz, all argentiferous, some of them of great power, and nearly all rich at the surface in chloride of silver. This seemed to be the land of promise for them, and the party immediately located the most prominent cropping lodes. A few days later, other parties had traced them here, and Mammoth District was organized, with R. V. Craig, Recorder, embracing ten miles square, extending five miles each way east, west, north and south from the spring at their camp in Craig's Cañon, to which was given the name of Willow Springs.

Early in February, Messrs. Hatch, Evans and party came in from the grand evacuation at Big creek, and pitched their tent a half mile below, where they laid out the present town of Ellsworth. Other prospectors soon found their way to Mammoth, and by June, 1864, the little town of Weston aspired to rivalry with its neighbor, Lone, across the valley. Things moved slowly, however, in Mammoth, until fall, when a large acquisition to the population settled along the broad cañon between the two towns, forming a straggling village a mile and a half long. It is a noticeable fact that not an individual of the settlers of that year has ever deserted the district. All remain and hold to their original locations, confident in the faith that they have ample wealth safely stored in the depths of their mines. The growth of this settlement has been slow, but steady and healthy. No excitement ever existed in relation to Mammoth; and so little is the district known abroad, that comparatively few have found their way here, while those who have, with a view of prospecting, have invariably remained.

I risk nothing in saying that within the boundaries of Mammoth there is more quartz and a larger number of lodes producing a greater variety of metals than in any ten miles square yet discovered in Nevada. It is ten miles from the east base of this range to the valley on the west, and parallel lodes occur at short intervals this entire distance. Over four hundred distinct lodes have been located, the major part of them remaining unopened, except by a little surface scratching; consequently their value is, in a great measure, undetermined. However, in the granite belt crossing the foothills on the east, a great number of these lodes have been explored to depths ranging from thirty to one hundred and forty feet, in almost every instance developing great increase in size and improvement in ore. Among the most extensive works now being prosecuted, we find the Mt. Vernon Co. foremost. Their mines are located in the hill south of the cañon and town, about midway of the granite belt. This company commenced work in April, 1866, and have driven a tunnel five hundred feet into the hill; also sunk a shaft one hundred and ten feet, which strikes the tunnel two hundred and eighty feet from its mouth. The shaft is eight by ten feet long in size, thoroughly timbered and

divided into two compartments. At the depth of one hundred feet it reached one of their lodes, which is twenty-one feet wide at that point, while at the surface its width does not exceed three feet. On the south side of the cañon, in the same belt, Messrs. Ferguson and Wilcox are sinking a large shaft on the American Flag lode. This has reached the depth of one hundred and forty-five feet, with similar increase in size and improvement in quality of ore.

Scores of lodes have been opened to the depth of eighty to one hundred and twenty feet, many of them showing remarkable improvement as they are explored. Prominent among these we find the Vigilante, Live Oak, Cactus, Rough Diamond, Hatch & Graham, Sacramento, Bowers, Northern Light, Uncle Sam, and Gould & Curry. The latter, belonging to the Ural G. & S. M. Co., of New York, is now being developed by a vertical shaft. It is probable that this company will erect a mill during the coming summer. The Hamilton G. & S. M. Co., of Philadelphia, also propose extensive operations on their numerous mines here this spring.

[To be Continued.]

[Written for the Mining and Scientific Press.]

## What is a Mining Engineer?

By J. S. PHILLIPS, C. E. M., Mining Engineer of Cornwall; Member S. E. M. S., London, etc.

EDITORS PRESS:—In the MINING and SCIENTIFIC PRESS, and other American journals, I have frequently seen most condemnatory remarks relating to inexperienced, interloping mining engineers, that have been sent to work mines in remote regions of this country, where the greater expenses of labor, manufactured materials and carriage, demand superior skill to ensure profitable development, even with rich lodes in favorable strata. To enumerate their legitimate callings, or illegitimate errors, would occupy more space and time than you will allow, or I can devote thereto. I however beg to forward the following, for those whom it may concern, answering the question—"What is a mining engineer?"

A man duly qualified by special education and practical experience to estimate the comparative values of mineral veins, and to conduct the numerous operations required for their profitable realization, should possess the following qualifications: Beyond the ordinary rudiments, his education should be theoretically advanced in algebraical, geometrical and trigonometrical mathematics; geology, chemistry, mineralogy, galvanism, magnetism, and mechanism; and, practically extended to analytical assaying, dressing, milling, smelting, and the general extraction of the useful minerals by the humid treatment.

In Civil Engineering, he should have sufficient operative knowledge to construct rail or common roads, canals, bridges, aqueducts, dams, or reservoirs; and be able to survey, with sufficient accuracy, the necessary subterranean passages for communication; by sinking, rising, or extending simultaneous shafts or tunnels, at the distances of from 100 to 3,000 feet, by the most irregular workings; and mapping the plans and sections thereof, with shafts, levels, winzes, stopes, and excavations; ramifications of dips, angles, spurs, variations and intersections of ledge or ledges therewith; so that he may be able to see before, breast their relative distances, bearings and positions; and thereby avoid groping his way in blind conjecture and expensive ignorance.

If practiced in Mechanical Engineering, he will possess a most powerful lever; for, being perfectly acquainted with pumping, hoisting, crushing, stamping, milling, digesting and smelting machinery, he will be enabled to design and forward his plans, by giving drawings for what he requires to be made, at the foundry or the mine; directing the various tradesmen, and supervising the erections at surface, and the extensive fixings beneath—for pumping, training, hoisting, ventilating, blasting, timbering, etc., etc., that require the greatest attention, and where preliminary errors cause recurring accident and continual waste, which sn-

tract from the larger profits that would otherwise accrue. In many far distant, mountainous, inaccessible, interior sections, where iron ore is also found, it is often advantageous to have, in addition to the usual carpenters', smiths', fitters', timbermen's, and pitman's workshops, a smelting and casting foundry, to manufacture, repair or renew the heavy wearing parts of the machinery, by which much expense of carriage, etc., is saved and transferred to profits. With these qualifications (which are theoretically synonymous with the Civil Engineer, and differing only in practice by their being directed and confined to mining requirements and a better knowledge of mineralogy), he must acquire sufficient further experience in the working of mines, as to the breaking of mineral and strata; to know if the cost for extraction will exceed the value obtained, be able to conduct the works in the most appropriate, expeditious and economical methods consistent with safety, and facilitate transit from the profitable portions of the ledge, by correctly positioned levels and shafts, through which the shortest possible horizontal, diagonal or vertical railways may convey the mineral to the surface, and thenceforward to dressing floors, crushing, milling, smelting or chemical works. A man of persevering acquisitiveness and industry, with sufficient firmness to combat the dangers and uncertainties of this profession, can become acquainted with these necessary qualifications in twenty years; and if he possesses sufficient integrity and honesty towards employers to condemn what he deems unprofitable, he is indeed worthy of his hire, and is a boon to the whole of the legitimate mining community.

The practice of mining companies have been most irrelevant; for they have shown no more discretion, as to who should have been sent to superintend their mines, than gratitude to those few qualified experts who have condemned their unworthy ledges, and sought the employment of others, in preference to wasting their funds. Such stockholders have generally worked their gains, more from the market than from the mines, and therefore neither desire, nor deserve, advice or sympathy; but, most unfortunately, it does not end with them, as their capital, properly expended, would have fostered and established mining as a staple industry, instead of degrading it as a rock to be avoided. And were it not that mining infatuates more than it deters, the consequences would have been that the enormous mineral resources of this coast now being wrought, would have remained concealed *in situ* for generations yet unborn.

Fortunately there are those who mine with rule and systematic caution, as they would manufacture or navigate; and there are beacons that warn and guide them from total loss to a secure and profitable haven, where insurance is guaranteed but by the steerage of the recognized and qualified pilot.

Humboldt City, Nev., April, 1867.

RANCHING AT LAST.—A Los Angeles letter to the San Bernardino *Guardian* of April 27th, has the following: "I understand that Mr. Stroug, who has been superintending a mine in San Francisco district, Arizona Territory, has obtained land of Don Pio Pico, at the Rancho, for the cultivation of the mulberry and the growing of silkworms." This we understand to be Charles L. Strong, who was at one time Superintendent of the Gould & Curry, in Virginia, Nevada, and was late Superintendent of the Moss ledge in Arizona.

A SMASH UP.—The engine at the Comet mill in Gold Hill, Nevada, was ready for a start the other day. The fly-wheel being on its center, it was lifted over by several men. It at once commenced revolving with constantly increasing rapidity. The throttle-valve refused to work. The engineer had barely escaped, when the wheel, which weighed 6,000 or 7,000 pounds, parted into its sections, one of which, weighing 350 pounds, went through the roof of the mill, and to a distance of 150 feet. The damage will be \$5,000. Nobody was hurt. The engine was an old one.

COCONUT CHARCOAL.—Charcoal from the shell of the coconut has been found to have a most extraordinary power for absorbing gases. It is very dense and brittle, and its fracture presents a sub-metallic luster.

[Written for the Mining and Scientific Press.]

## Mining in Boise Basin.

PIONEER CITY, April, 1867.

EDITORS PRESS:—Permit me, through your valuable paper, to give you a brief account of some of the mines in this section of country. We have had a very long winter, and a good deal of snow. The weather has been very mild, not hindering those at work drifting, more than four or five days this winter. The placer miners have had a long rest. If the miners in this camp would fix for drifting, as in Northern California, they could work to good advantage all the year round.

Some of our quartz miners have been getting out rock all winter. The Elk Horn G. & S. M. Co., is a corporation of 5,400 shares, or feet, located on three ledges, well defined. They have a 5-stamp mill capable of crushing ten tons of rock per day, which is run by water. They have a fine water privilege, abundance of water, enough to run five mills. The average yield of the rock per ton is about \$40; cost of getting out and crushing, per ton, less than \$15. In a new tunnel lately run by the company, they have struck the ledge four and a half feet wide, at a depth of over 300 feet. They can go 1,000 feet lower, if they choose. The company contemplate increasing their stamps the present season, having a large amount of rock on hand. This is a fine piece of property.

Next is the Big Muddy G. & S. M. Co., situated on Big Muddy, and owned by Messrs. Sifers & Wright. The situation of this ledge is in one of the best localities in this Basin, and the facilities for milling purposes are abundant. Plenty of the finest kinds of timber for fuel and mining purposes on the ground. Their tunnel is in over 100 feet, which shows a good ledge about four feet thick, with walls well defined. Hon. Geo. Hearst, of your city, visited this locality last summer, and thinks it is a very fine ledge indeed. The ore ore looks well, and assays well, as the following will show:

No. of Assay.	Gold.	Silver.	Total.
1st.—By Fred. Heller.....	\$14 64	\$450 59	\$465 05
2d.—S. Honigsberger.....	7 15	186 17	961 26
3d.—Baker & Day.....	215 84	297 07	512 91
4th.—Baker & Day.....	a trace	1,516 32	\$1 61
5th.....	a trace	50 64	
6th.....	a trace		
Gold and Silver.			
7th.—Bryant, agent of Pacific M. Co.....	\$384 63		
8th.....	240 62		
9th.....	121 54		
10th.....	31 20		
11th.....	84 82		
12th.—George Hearst.....	180 00		
13th.....	214 50		
14th.—Pacific Assay and Refining Works, S. F.....	301 00		

Average of 14 assays, per ton.....\$371 08  
This ledge can be traced for over two miles. On the south extension is W. H. Carter & Co., who are also doing good work on the ledge. The north extension is owned by Ben Willson & Co., who are thinking of putting up a mill before long, and they have the cash to do it.

Next is the Justicia G. & S. M. Co., situated six miles from Pioneer City, in a northeast direction, on what is known as Charlotte Creek. It is owned by Messrs. Popham & Duncan. They have struck the ledge in their tunnel at a distance of 210 feet, and at a depth of 500 from the surface. They have plenty of timber for all purposes, with a ditch which will carry 300 inches of water, with 200 feet fall. Sufficient ore will be taken out to pay all expenses, before smelting or crushing works are erected.

The False Bed-rock diggings, with a single exception, have done but little this winter. The owners were not prepared for drifting. The exception is on the Big Muddy, where they have been getting out dirt all winter. The gold is plainly to be seen in the dirt. The false bed-rock is composed of granite mixed with a soft cement. These false bed-rock diggings will be one of the resources of this country in a few years.

Spring will soon open. Ben. Willson, Esq., who has been rusticated all winter, and investing his surplus gold dust in your city, has returned, and is getting the water into his ditches. One ditch, only two miles long, carries 3,000 inches of water. The Clear Creek ditch carries 1,000 inches, and is owned by Willson & Garbison; the Mountain ditch carries 1,000 inches, also owned by Willson & Co. Other ditches furnish some water. Water is sold for sixty cents per twenty-four hours; but the miners have called a meeting, and propose to have it reduced to thirty cents—so we may have a water strike. How foolish for men without means to combine against capital. It is to be hoped that the matter will be compromised.  
JOHN HEMLEY.



## Mechanical.

## Cheapening the Cost of Iron.

The necessity for cheapening the cost of producing pig iron in this country is becoming more and more apparent to our iron producers, in consequence of the reduction of wages abroad and their increase at home. It is found impossible to secure a reasonable return for investments of this character with our present tariff, except by practicing the most rigid economy and the introduction of all the most approved appliances elsewhere known. In addition to the great disparity in wages, which has hitherto resulted so much to the advantage of English iron producers, our trans-Atlantic friends have also, of late, rather stole a march on us in the way of improvements in furnace construction—particularly with regard to size and height. The furnaces most recently constructed in England are nearly double the height of the highest in Pennsylvania. We recently made a lengthy notice of the great height to which they are now running up their furnaces in England—an elevation of 102 feet, with 27 feet boshes. Eighty-five feet is a common height there. It is found that there is a great economy in fuel from using these high furnaces—every particle of heat, except the small amount which radiates through the walls of the furnace, being utilized, while the gases also are all taken off and consumed for increasing the temperature of the hot-blast. A full description of these furnaces will be found on pages 147 and 163 of the present volume.

It is said that the saving of fuel between a furnace 40 feet high and one of 85 feet elevation, is fully twenty per cent.; while by using a blast at a temperature of 1,000°, instead of 700°, a saving of fifteen per cent. is effected; at least such is the statement of an English paper. The opinion was prevalent a few years ago, that the use of a hot-blast was an injury to the iron produced; but it is now found that the blast may be heated even to the temperature of the furnace itself without any injury to the iron. The blast may be readily heated, in practice, to 1,000° or 1,200°, by passing it through cast iron pipes, and that without any serious damage to the pipes themselves. These pipes are now usually heated in England almost entirely by the gases which are taken off at the top of the cupola, and brought down to the blast-heating stoves below in iron conduits, where it is burned, so as to keep up the necessary temperature of the iron tubes through which the draft passes on its way to the furnace. It is said that some of the English furnaces are now making iron with about one-half the fuel employed per ton in Pennsylvania, while the quality is improved by the very means used to economize the fuel. The higher the temperature of the hot-blast employed, so far, the better the iron is said to be, especially for forge purposes. Much attention is now being directed to this matter in this country. May it not be that our Oregon friends have made a mistake in the size of their furnace, which is thirty-two feet high, with nine feet boshes. It is to be hoped, however, that the excellent quality of their ore may make up for any deficiency in the character of their furnace. Of course such furnaces as we have been describing cost a large amount of money, and are calculated to turn out a proportionately increased quantity of iron. Perhaps it is wise to begin small; and we presume that when another furnace is to be erected, all the latest improvements abroad will be taken into most careful consideration.

EXTREMELY hard cast iron was made some years ago by M. Gaudin, by introducing a small quantity of borax, and more latterly by combining the fused iron with phosphate of iron and peroxide of manganese. This mixture cannot be forged, but is easily cast into any form desired, and may thus be brought into general use.

KRUPP'S STEEL WORKS, at Essen, in Prussia, cover 450 acres of land, fifty of which are under roof. It comprises 400 furnaces for melting, heating and puddling. The motive power is furnished by 160 steam engines. From 8,000 to 9,000 men are employed at the works in Essen, besides 2,000 at the mines which are owned by the company. These works are about four times the extent of all the foundries and machine shops in San Francisco put together. The largest crane has a lifting power of eighty tons. They have in course of erection the largest steam hammer in the world, which will weigh 125 tons, while the weight of the bed-plate will reach 600 tons. In laying the foundation for this immense hammer, the ground was excavated to the depth of ninety feet!

A NEW MECHANICAL APPLIANCE.—Large screw bolts, for securing armor plates to their places are forged in France, by a means or process known only to one establishment, where it is kept a profound secret. The Sheffield men have exercised their ingenuity not a little in attempting to accomplish the same thing; but hitherto without success. *Engineering* suggests that such screws (technically known as "wood screws") may be rolled between plates grooved in a proper manner. Others think the screw is forged in a machine, with a properly shaped trip hammer. One or the other process it is thought might be a practicable and valuable improvement, and one worthy the attention of ingenious mechanics.

PINS AND EYES.—The *London Engineering* in an article upon this subject, says that in all cases, but more particularly in bridge-work, it is important that the size of the pins and eyes should be so proportioned to the strain upon them that they will be of equal strength with the parts which they connect. In machinery, when the parts are subject to motion, sufficient bearing surface has to be provided to prevent heating, and it is generally this consideration which governs the size of the parts, those proportions which give the requisite bearing surface being generally amply sufficient as far as mere strength goes. After giving the results of experiments tried to determine the proper proportions of the eyes of the links and the connecting pins of the iron suspension bridge over the river Dnieper at Kieff, the chains of which weighed over 1,600 tons, and stating the proportions recommended by Sir Charles Fox and Professor Rankine, the *Engineering* expresses the opinion that when circumstances will allow its being done, the best way to obtain the requisite bearing surface for the pins of connecting links of small thickness in proportion to their section, is to increase the thickness of the eyes beyond that of the links themselves. This allows the metal around the eye to be made narrower, and it thus consequently diminishes the inequality of the strain throughout its section. Where the links are to be connected by a square section, or are of considerable thickness in proportion to their area, this thickening of the eye becomes unnecessary, as sufficient bearing surface is given without it. A rule for the size of eyes, which has been much used, and which gives generally good results, is to make the outside diameter of the eye equal to twice the diameter of the pin passed through it, and then to increase the thickness until the requisite sectional area is obtained.

THE SECTIONAL AREA.—Boulton and Watt's rule for finding the sectional area of a fly-wheel per horse power is: "Multiply 44,000 times the length of the stroke in feet by the square of the diameter of the cylinder in inches, and divide the product by the square of the number of revolutions per minute, multiplied by the cube of the diameter of the fly wheel in inches. The result and number will be the proper sectional area of the fly wheel in inches." See also Bourne's *Hand Book on the Steam Engine*, page 229.

GLUE FOR METALS.—A good glue for metals may be made by mixing with sixteen parts of melted glue one part gum ammoniac, and then adding one part of saltpetre acid.

The largest water wheel in this country is said to be running at Troy, N. Y. It is over sixty feet in diameter.

## Scientific Miscellany.

OREIDE—AN IMITATION OF GOLD.—This beautiful alloy, resembling gold in color, consists of pure copper, 100 parts; zinc or (preferably) tin, 17 parts; magnesia, six parts; sal ammonia, 3-6 parts; quicklime, 1-6 parts; tartar of commerce, nine parts. The copper is first melted, then the lime, magnesia, sal ammonia and tartar are added, little at a time, and the whole is briskly stirred for about half an hour so as to mix thoroughly; after which zinc is thrown on the surface in small grains, stirring until entirely fused. The crucible is now covered and the fusion kept up for about thirty-five minutes, when the dross is skimmed off and the alloy found ready for use. It is quite malleable and ductile, and may be drawn, stamped, chased, beaten into powder or into leaves, like gold leaf. In all of which conditions it is not distinguishable from gold, even by good judges, except by its inferior weight. There is an establishment at Waterbury, Conn., devoted exclusively to the manufacture of this alloy.

Another beautiful imitation of gold is made with ninety parts of copper and ten of aluminum, which must be perfectly pure, of the best quality, and in exact proportion. It is but little affected by the atmosphere, and is strong, malleable and homogeneous in structure.

PREPARING OXYGEN GAS—CAUTION.—Several accidents have occurred, and lives have been lost, while preparing oxygen gas from chloride of potash and oxide of manganese in retorts made for the purpose of such work. In order to prevent accident, Prof. Doremus, of New York, uses, instead of the ordinary copper retort, a common tea-kettle, into which he puts his materials, lutes down the lid with clay or plaster of paris, and attaches a tube to the spout of the tea-kettle. When placed over the fire, the kettle is tilted a little backwards, so that if the gas should be generated very rapidly, the worst that could happen would be the blowing off of the lid of the tea-kettle, instead of bursting it, to the danger of life and limb.

HYDROPHOBIA.—The reason of the inability of physicians to find any reliable antidote or cure for hydrophobia, is now attributed to the fact that it is a disease to which the susceptibility of individuals seems to vary so remarkably, that no remedy can be applicable to all. What will effect a cure in one case fails in another. It is said that Youatt, who made the diseases of animals his especial study, was bitten eight times by rabid animals, and saved himself from the usual effects by rubbing crystals of nitrate of silver into the wounds made. In other persons the remedy has failed.

HOTTINA is the name given to a "powder" recently devised by M. Hottin, of Paris, for rendering linen fire-proof. When used, it is mixed with an equal quantity of starch. It is prepared by adding a little ammonia to a solution of phosphoric acid and lime, and filtering with animal carbon. After filtering, concentrate to a certain point (not given) by evaporation, when five per cent. of gelatinous silicic acid is added, and the whole evaporated to dryness. A crystallized substance is the result, which may be pulverized and used, as above, in the form of a powder.

ANIMALCULES IN SNOW.—Late observations with the microscope show that numerous animalcules exist in snow, from which we learn that life is not restricted to within the range of temperature which has hitherto been assigned to it. The fluids which give life and the power of mobility to these minute organisms must be altogether unlike that of animals and insects—perhaps something akin to alcohol, but certainly possessing the power to resist a great extremity of cold.

THE astronomy of the southern heavens is about to be thoroughly studied and watched. Mr. Grubb, the celebrated optician of Dublin, has completed an enormous reflecting telescope, ordered by the Victoria Legislature, for the sum of \$25,000, for Melbourne. The tubes of the instrument are four feet and a half in diameter, the sides are made of tapering steel ribs, and the entire instrument is not only singular on account of its dimensions, but also because of its completeness, accuracy and finish.

THE POINT OF ABSOLUTE COLD, or the deprivation of all heat, which is the temperature of interplanetary space, is now estimated to be about 463° below zero, Fah. Persou, in calculating the heat absorbed by different bodies during fusion, used 256° F. as his "constant" or "absolute cold;" but Natterer having produced an artificial cold of 220° below zero, the "constant" is now estimated as above, at 463°.

SENSITIVE FLAME.—The jumping of a naked fish-tail flame, in response to musical sounds, was first accidentally observed by Prof. Lecompte, of South Carolina, at a musical party. At a lecture on the subject lately delivered at the Royal Institution of Great Britain, Prof. Tyndall exhibited some extraordinary experiments. He showed a flame twenty inches long, which was knocked down to eight by a very slight tap on a distant anvil. At a distance of twenty yards the dropping of a sixpence from the height of a couple of inches into his hand containing a few coins brought the flame down. It was sensibly increased by the creaking of boots in walking across the floor. On speaking to the flame it jumped at intervals, apparently picking certain sounds from the utterance, to which it could respond, while it was unaffected by others.

EXPANSION DUE TO THE GALVANIC CURRENT.—Mr. E. Edlund, of the Swedish Academy, has made a series of experiments with conductors of a galvanic current to ascertain whether the expansion they undergo is simply the result due their increased temperature or whether it is greater. He invariably found the expansion of his conductors (platinum, iron and brass) was greater than would be produced by the actual heating of these metals to the temperature indicated. This increased effect he proposes to call galvanic expansion, to distinguish it from caloric expansion. The galvanic expansion increased rapidly with the intensity of the current; but the ratio of expansion and intensity he has not yet determined.

M. DAUBREE has effected the decomposition of feldspar by rapid rotation in a cylindrical vessel with distilled water. The water became alkaline and he was enabled to separate considerable quantities of potash or soda, according to the rock operated on. If the process be practicable on an industrial scale, its importance is obvious. In a scientific point of view, the principle developed is very interesting, and may open the way for varied investigations. M. Daubree queries whether decomposition as well as mechanical disintegration of rock may not be produced by the motion of the sea.

A NEW SOURCE OF TANNIN.—Tanning with chestnut wood has been introduced to notice in Paris, by a tanner of Lyons, who claims that the tannin obtained from this source instead of the bark, makes leather of peculiar fineness, uniformity, and excellence of color, and superior in quality, in all respects, as compared with the best oak tanned.

A NEW ALKALOID, named Rhædine, has been discovered by Hesse in the red poppy and in opium. It is soluble in water, alcohol and ether, crystallizing from the last in white prisms. Ammonia precipitates it in white crystalline flocculi, bichloride of mercury gives a white amorphous precipitate, and strong acids decompose it in the gold, giving a purple solution.

SINGULAR FACT.—Gilded silk threads, when exposed to an intense electrical current, are acted upon in a singular manner. The gold which covers them is volatilized without the threads being injured by the heat.

BEEF PRESERVED FORTY YEARS.—Some beef deposited in tin cans beneath a heap of stones in Spitzbergen by Capt. Parry, in 1827, was recently discovered, and a portion was cooked and eaten at a supper given in Stockholm, Sweden.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

63,374.—MALT-DRYING APPARATUS.—H. A. Engels, C. H. Engels, and John Wieland, San Francisco, Cal.:

We claim, 1st, The mode of malt-drying in which the grains are mechanically carried into and spread about the kiln, then therein turned and propelled by rakes and at the same time submitted to a current of hot air combined with the heat of steam pipes, in a manner substantially as described above.

2d, The combination and arrangement of elevator, h, worm, p, picking-shaft, q, kilns, i, rakes, h, shafts, z, z, funnels, a and d, steam-pipes, k, k, hot-air pipes, l, n, n, o, o, flue, m, and chute, e, f, in the manner and for the purpose described.

63,490.—HOT-AIR FURNACE.—H. A. Engels, C. H. Engels, and John Wieland, San Francisco, Cal.:

We claim the arrangement of the set of pipes, c, i, p, l, q, bolted and cemented together, and at the same time staying the side plates, the sections, and the whole structure of the furnace by the means of the grooved shoulders and flanges of said pipes, as shown in Figs. 5 and 6, in combination with the square tubes or drying-chambers, r, s, substantially in the manner, for the purpose, and upon the principle as herein set forth.

63,534.—WEED-CUTTER.—C. G. Lathrop, San José, Cal.:

I claim, 1st, A weed-cutter, made and operating substantially as herein shown and described.

2d, The V-shaped cutter, I, provided with knives, H, at its ends, substantially as and for the purposes herein shown and described.

3d, The circular revolving colter, G, arranged in front of the plow-beam in combination with the cutters, I and K, all made and operating substantially as herein shown and described.

4th, The adjustable draught-attachment, E and F, in combination with the cutters, G, I, and K, as set forth.

5th, A weed-cutter so constructed that either the knives or the wheels on which the whole device is supported can be adjusted up and down, so that the cutters can be brought more or less to the ground.

This invention relates to an apparatus for reducing manual labor in eradicating weeds and also for completely destroying the latter. It consists chiefly in the use of a V-shaped horizontal cutter which is secured to a standard that is attached to the underside of a common plow beam.

63,585.—BOAT AND DAVIT TACKLE.—Edgar Wakeman, Brooklyn, Cal.:

I claim, 1st, Uniting the davit-tackle to the hoist by means of a hook-link, B, in combination with correspondingly shaped hook-strap or bracket, C, when said link and hook-strap are jammed and held together by means of a cam or lever, substantially as described.

2d, Uniting and detaching the hoat to and from the davit tackle by means of a lever or cam, in combination with the hook-link, B, and strap, C, substantially as described.

63,647.—IMPROVEMENT IN CULTIVATOR TEETH.—D. C. Matteson and Truman P. Williamson, Stockton, Cal.:

We claim, 1st, The adjustable bit, A, and the leveled foot of the curved standard, C, resting on the said bit, in combination with the double mold-board or shovel, B, the same fitting over the standard and bit, substantially as described.

2d, The oblong hlock or span, D, in combination with the manner of fastening the teeth together by bolts passing through the mold-board, bit and span, substantially as described.

The nature of the above invention consists in providing a "cultivator tooth," having a double pointed bit, so constructed that when the hovel wears from the bottom of the point it can be turned over, thus sharpening itself, it being attached to a standard, over which and the bit, is placed a double mold-board or shovel; the whole held together by bolts passing through them and the span, transversely at the bottom. The bit can also be turned around, and the other end used when the first is worn out. By this arrangement and construction of cultivator teeth, a mechanism is had that will be found admirably adapted for preparing the soil of

the Pacific coast for seeding after plowing, it being the usual custom to follow by cultivator after the land has remained unseeded for a season; or it may be used to prepare new ground in its hardest state. Several other important advantages are claimed for this invention, not enumerated above.

63,645.—QUARTZ MILL.—Thomas Varney, San Francisco, Cal.:

I claim the combination of the slots in the smooth grinding surface filled with wood with the peculiar form of the revolving grinder, m, and stationary grinder, p, when constructed and operating substantially as described and for the purpose as set forth.

63,684.—BIT BRACE.—William H. Woods, San Francisco, Cal.:

I claim the brace-head consisting of the collar, D, the hlock, E, the pin, g, and the steps, m and n, with the nut, G, substantially as and for the purpose described.

The nature of this invention is to provide an improved bit-brace, so constructed that the bit may be easily and securely fastened to the stock, and the wear between the stationary and movable parts may be compensated for, and so much lessened. To accomplish these ends, the brace has a slot cut in the side, at the lower extremity, within which moves a key, turning on a pivot at its upper end. A collar, the inside of which is eccentric, surrounds the shaft of the brace and key, and by simply turning it partly round, forces the key into the depression in the head of the bit. At the upper end of the brace is an opening, in which is placed a small steel pin, which also fits loosely in the head. Both ends of this pin turn on a steel die, and any wear is compensated by a check-nut, which can be moved at pleasure as necessity requires.

## RECENT INVENTIONS.

AN IMPROVED WAGON SPRING.—Mr. E. P. McCarthy, of this city, has devised an improved wagon spring, the design of which is to provide an elliptical spring so constructed that the spring will not be easily broken, however great the weight or the spring or tension which may be put upon them. In order to accomplish this object, Mr. McCarthy attaches to the inner surface of both the upper and lower portion of the spring, metal cups, so secured that when brought together they form a globe. Midway between these is fixed a rubber ball, by means of a spindle passing through it, so that when the spring is brought together sufficiently, the ball is held between the cups, and thus receives the weight of the load. By the use of this spring, a much greater load can be carried without danger of breaking the spring, although the said spring may be made much lighter than those of ordinary construction. The cups are made sufficiently shallow as not to allow of their edges coming together. In case a break should occur, the cups and ball furnish a safe and sure support for the wagon or buggy, thereby preventing any possibility of danger to life or limb from the breaking of a spring. These springs can be made much cheaper than those now in use, as but a single piece of iron is used for each upper and lower part of a spring. The additional lifts, which now add so greatly to the cost and weight of a spring are all dispensed with. This improved spring is therefore neater, cheaper and safer than any now in use. A patent has been applied for the same through this office. Patents will also be taken out in the principal European countries.

RUSSIAN AMERICAN TELEGRAPH.—A correspondence between the Western Union Telegraph Company and Secretary Seward, is published. The company state that work on the line has been discontinued, after an expenditure of \$3,000,000, the now assured success of the Atlantic cable rendering the enterprise one of doubtful pecuniary profit; and request the Secretary to use his influence with the Russian Minister at Washington, to the end that a mutual understanding with that government, and perhaps some arrangement, may be effected. Mr. Seward, in his reply, thanks the company for its frank and cordial communication, and promises to comply with its request.

JOINT STOCK COMPANY FOR INVENTORS.—Mr. J. H. Reynerson, of Decatur county, Iowa, proposes, through the American Institute, that inventors form a company, with shops at Washington, where they could have access to the Patent Office, and keep ingenious machines at work to improve other inventions. He thinks they would make money.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING, May 18, 1867.

## CITY STOCKS.

Transactions in City Stocks in the Board continue light. We note sales of Spring Valley Water at \$67 3/4 share; San Francisco Gas at \$65.50, and Cal. Steam Nav. Co. at 70 3/4 cent. Twenty-eight shares of Union Ins. Co. realized \$107 3/4 share. The Bank of California paid its usual dividend of 1 3/4 cent. per month on the 15th inst. The Omnibus and North Beach and Mission Railroad Companies paid dividends of 1/2 3/4 cent. on the 15th inst.

## MINING SHARE MARKET.

The Mining Share Market has been somewhat irregular since our last reference. Some stocks experienced a material decline early in the week, while others have been well maintained at a slight advance. At the close, the market obtained more firmness under large sales of several prominent stocks. Out of \$1,255,400 in bullion obtained by eleven companies located on the Comstock lode during the month of April, \$460,200 was returned in the shape of dividends by nine of them. The Gould & Curry and the Confidence companies, whose receipts are included in the above amount, paid no dividends during the month.

HALE & NORCROSS—continues out of the market. During the past week it was quoted at \$2,810 bid and \$3,400 asked. We are informed that the present yield of ore is fully up to the average reported in our last issue—\$40 per ton. The new shaft is now about 330 feet in depth.

SAVAGE—has been dull of sale, but closing quotations of last week have been well maintained, opening at \$3,225@3,200, improving to \$3,250, and closing yesterday at \$3,250. During the week ending May 11th, 1,919 tons of ore were taken from the mine, showing an assay value of \$81,033, equal to \$42.22 per ton. Of this amount, 57 tons came from the old works, 57 from the sixth station, 1,499 from the seventh station—north and middle mine—and 306 tons from the south mine—seventh or second station. The ore is said to be decreasing in the sixth station, but in the seventh the breasts open out splendidly, and are reported to look better than the sixth station did at any time. The seventh station is now designated by north, middle and south mines. Most of the present yield comes from the north mine, where eight floors above the track have been opened, disclosing fine ore everywhere. In the middle mine, only two floors have been opened thus far, which are also reported to be in good ore. Work is somewhat retarded in the south mine, on account of the frequent caves, but the ore obtained shows an improvement in quality. The shaft has attained a depth of 80 feet below the third, or eighth, station. On the third station, good progress is being made in the north and southwest drifts, both of which are in about 165 feet.

CROWN POINT—has been quite active, declining from \$1,775 to \$1,575, rallying to \$1,650, then selling at \$1,450, ex-dividend, and closing at \$1,605. During the week ending May 10th, 621 tons of ore were extracted. The east vein on the 500-foot level has been opened 35 feet, showing no material change. Work has been resumed on the west drift, which is now in 109 feet, and it was expected that they would soon commence to sink toward the sixth level. This company is now erecting machinery that will enable them to sink to a depth of 1,600 feet, which, it is thought, will be completed in four months hence.

YELLOW JACKET—has been sold to a considerable extent under a rapid improvement, rising from \$1,530 to \$1,736, and closing at \$1,745. It is said that very encouraging reports have lately been received in this city as to the present quality of ore obtained from this mine, the average assays being much higher than formerly.

GOULD & CURRY—has been well main-

tained at an advance over the closing quotations of last week, selling at \$585@595, and closing yesterday at \$575. We have nothing of special interest relative to this mine. The mill started up again on the 11th inst.

CHOLLAR-POTOSI—continues to be the most active stock on the list, opening at \$500, seller 30, and \$520, receding to \$480, ex-dividend, advancing to \$557.50, and closing at \$593. We learn that the Blue Wing station continues to produce the usual quantity of ore. The body of ore in the Santa Fé station is said to be 216 feet long, and the whole extent of it has not yet been ascertained. The three winzes have attained the following depths: north, 40 feet; middle, 85 feet, and south, 63 feet—all reported to be in ore the entire distance. As soon as the drift from the lower Santa Fé connects with the north winze, the increased production of ore will be about 100 tons per day. The ore shipped to custom mills during the week ending May 11th amounted to 3,948 tons. The following is an estimate of ore in this mine, made by Mr. Stretch, the company's surveyor, and which he states to be considerably under the probable extent:

Above Blue Wing station or adit level.....	8,000 tons.
Between adit and Santa Fé station.....	32,697
Less waste.....	8,175
.....	24,524 tons.
Santa Fé station.....	38,720
Less waste.....	9,630
.....	29,090 tons.
Below lower Santa Fé.....	14,655
Less waste.....	3,666
.....	11,000 tons.
Other portions of mine.....	5,000 tons.
Total.....	77,564 tons.

ALPHA—receded from \$430 to \$405.... BELCHER declined from \$400 to \$355, advanced to \$397.50, and closed at \$391.... OPHIR improved from \$435 to \$445, seller 30, declined to \$350, then sold at \$390@350, and closed at \$400. The tenth station drift south has been turned westward and run beyond the point at which the west wall should be found (judging from the developments on the ninth level) without reaching the east clay. The tenth station drift north has also been turned westward through the east clay, with the intention of running it on the ledge.

IMPERIAL—opened at \$240, declined to \$200, rallied to \$230, then sold at \$211, ex-dividend, and closed at \$186. The first clean-up of the Rock Point mill for the current month yielded \$10,000 in bullion.

EMPIRE—receded from \$185 to \$160, then sold at \$170 and \$165, ex-dividend, and closed on Thursday at \$174. The bullion returns of this company in April amounted to \$22,884.66. A dividend of \$6 per share was paid on the 15th inst.

KENTUCK—sold at \$200 per share. We have been furnished with the following statement of the operations of this company during the month of April, 1867:

Gross yield.....	\$108,933 63
Grinding expense.....	\$3,292 89
Labor.....	7,315 50
Assaying and taxes.....	1,397 39
Lumber.....	2,673 72
Expense account.....	1,906 83
Wood.....	749 74
Sundry, etc.....	554 00
.....	2,179 16
.....	48,272 23

Net profits for April.....\$50,681 30  
After the payment of a dividend of \$20 per share (\$40,000) on the 15th inst., this company carries over a surplus of \$22,207.72. They reduced 2,183 tons of ore in April, showing a yield of \$49.91 per ton.

CONFIDENCE—advanced from \$65 to \$80, and closed yesterday at \$70.... GOLD HILL Q. M. Co. sold at \$170.... OVERMAN at \$41 @47, and closed at \$45. Sale of delinquent stock postponed to June 10th.... BULLION declined from \$45 to \$39, and sold yesterday at \$40.... DANBY advanced from \$12 to \$30, receded to \$21, and closed at \$23.50.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,411,678.

**Gold Bars**, of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

## Perry Davis' Vegetable Pain Killer,

After a thorough trial, by innumerable living witnesses, has proved itself the Medicine of the Age. Although there have been many medicinal preparations brought before the public since the first introduction of Perry Davis' Vegetable Pain Killer, and large amounts expended in the introduction of the Pain Killer has continued to steadily advance in the estimation of the world as the best Family Medicine ever introduced. It is an internal and external remedy. One positive proof of its efficacy, is that the sales have constantly increased, and upon its own merits. The effect of the Pain Killer upon the patient, when taken internally in cases of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the system, has been truly wonderful, and has won for it a name among medical preparations that can never be forgotten. Its success in removing pain, as an external remedy, in cases of Burns, Bruises, Sore Throat, Cuts, Stings of Insects, and other causes of suffering, has secured for it such a host of testimony, as an almost infallible remedy, that it will be handed down to posterity as one of the greatest medical discoveries of the nineteenth century.

Sold by all Medicine Dealers everywhere. 18v14-1m



## MINING SHAREHOLDERS' DIRECTORY

[Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and Date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DISTRICT, COUNTY, OR COUNTY OF LOCATION.	AMOUNT AND DATE OF ASSESSMENT.	DATE OF MEETING.	DAY OF DELINQUENT SALE.	AMOUNT AND TIME OF PAYMENT OF DIVIDENDS.
Aberthaw, Virginia, Nev. March 23, \$5.	April 23, May 27				
Adella, Sierra Co., Cal., April 9, \$50.	May 9—May 27				
Big Blue Lead, Kern Co., Cal., Feb. 19, \$3.	April 2—May 27				
Butcher, Virginia, Nev. March 23, \$12.	April 23—May 27				
Belcher, M. Co., N. V., Nov. March 23, \$1.	April 23—May 27				
Baldwin, Vir. Nev. March 23, \$3.	April 23—May 27				
Butterfield, Chihuahua, Mex., April 11, \$2.	May 16—June 3				
Chollar-Potosi, Lander Co., Nev. div. 25.	Payable May 13				
Cinco Senores, Kinloch, Mex., May 1, 10c.	May 31—June 22				
Chalk Mountain, Nev. Co., Cal., May 1, \$1.	June 1—June 13				
Camargo, Lander Co., Nev., Feb. 11, \$3.	Mar 23—May 27				
Chilpancingo, Sonora, Mex., March 23, \$5.	May 2—May 27				
Cherokee Flat, Butte Co., April 19, \$3.	May 11—June 3				
Crown Point, Nevada, Nov. 18, \$1.	Meeting June 3				
Crown Point, Nev. dividend \$3.	Payable May 13				
Confidence, (H. H.) Nev., April 23, \$10.	May 29—June 13				
Diana, Lander Co., Nev. March 23, \$5.	May 3—June 4				
Danielson, Del Norte Co., Cal., March 16, \$1.	May 4—June 1				
De Soto, Humboldt Co., Nev. April 24, \$50.	June 1—June 13				
Daney, Lyon Co., Nev., April 23, \$50.	May 30—June 17				
Evans Cons. Corp., Del Norte Co., Annual Meeting May 23					
Empire M. & M., Nev. dividend \$5.	Payable May 16				
Francisco-Americana, L. C., April 24, \$50.	May 21—June 4				
Golden Rule, Tuolumne Co., div. 50c.	Payable May 1				
Gould & Curry, Virginia, Nev., dividend \$3.	Payable Jan 8				
Gold Hill, Nevada, div. 10c.	Payable April 1				
Gold Hill Quartz Co., div. 10c.	Payable May 13				
Hope Travel, Nev. Co., Cal., April 15, \$1.	May 22—June 11				
Hale & Norcross, Virginia, Nev., div. \$125.	Payable May 15				
Hancock Cons., Del Norte Co., March 4, 10c.	May 3—May 20				
Imperial, Virginia, Nev., div. \$15.	Payable May 15				
J. L. Alpine Co., Cal., April 20, \$1.	May 30—June 17				
Julia, Storey Co., Nev., May 15, \$1.	June 18—July 6				
Lyon M. & M. Co., El Dorado Co., Annual Meeting June 6					
Lady Franklin, Alpine Co., May 2, \$5.	June 10—July 22				
Keystone M. Calaveras Co., Feb. 20, \$10.	April 29—May 20				
Kenwick, div. \$15 per share.	Payable May 11				
Kelsey G. & S., El Dorado Co., April 25, \$5.	May 29—June 15				
Lyon M. & M., El Dorado Co., May 6, \$2.	June 7—June 22				
La Blanca, Sonora, Mex., April 23, \$250.	May 25—June 10				
Morning Star, Alpine Co., April 6, \$1.	May 28—June 12				
Neagle & Corcoran, Nev., May 13, 25c.	June 13—July 1				
Overman, Lander Co., Nev., March 12, \$10.	June 1—June 10				
Patrolina & Dolores, Mex., April 26, \$3.	May 29—June 15				
Peninsula, L. C., April 23, \$5.	June 1—June 15				
Rattlesnake, Yuba Co., March 22, \$1.	April 25—May 14				
Rippon, Alpine Co., Cal., Annual Meeting May 27					
Rippon, Alpine Co., Cal., April 23, \$5.	May 2—June 17				
St. Louis, Lander Co., Nev., May 4, \$5.	June 13—July 7				
Shoshone S. M., dividend \$2 per share.	Payable March 14				
Savage Virginia, Nev. dividend \$100.	Payable May 8				
Silver Valley, dividend \$1.	Payable Feb 1				
Silver City, Nevada, div. \$1.	Payable March 6				
Sierra, Douglas Co., Nev., April 16, \$1.	May 4—May 31				
Sierra Nevada, Storey Co., Nev., April 10, \$1.	May 14—May 30				
Tellurium, Amador Co., Cal., May 17, \$1.	May 16—June 3				
Tuolumne Mt. Tuol. Co., Cal., April 18, \$1.	May 20—June 4				
Union Cons., Calaveras Co., April 19, \$50.	May 20—June 10				
Walt Cons., Arizona, April 22, \$1.	May 21—June 8				
Walt Cons., Arizona, April 22, \$1.	May 21—June 8				
Whitman, Lyon Co., Nev., Annual Meeting June 4					
Yellow Jacket, Hold Hill, div. \$50 sh.	Payable May 10				
Yosemite Cons., Lander Co., Nev., div. \$1.	Annual Meeting June 3				
Yosemite, Lander Co., Nev., April 11, \$50.	May 15—June 3				

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	FRIDAY EVENING, May 17, 1867.	Bid.	Asked.
MISCELLANEOUS STOCKS.			
United States 7-10th Bonds, June Issue.	\$80	80 1/2	
Legal Tender Notes.	13 1/2	14	
California State Bonds, 1857.	90	91	
San Francisco Bonds, 1851.	100	102	
San Francisco City Bonds, 1855.	80	85	
San Francisco City and County Bonds, 1858.	72	74	
San Francisco City and Co. Bonds, 1858.	80	85	
San Francisco City and Co. Bonds, 1862.	80	84	
San Francisco City and Co. Bonds, 1864.	80	84	
San Francisco City and Co. Bonds, 1865.	80	84	
San Francisco City and Co. Bonds, 1868.	80	84	
San Francisco City and Co. Bonds, 1870.	80	84	
Sacramento City Bonds.	22	24	
Sacramento County Bonds, 1858.	60	65	
Marysville Bonds, 1858.	75	80	
Stockton City Bonds.	75	80	
Yuba County Bonds, 1858.	75	80	
Santa Clara County Bonds, 1858.	75	80	
Butte County Bonds, 1858.	75	80	
San Mateo County Bonds, 1858.	75	80	
California Steam Navigation Co.	70	75	
Spring Valley Water Co.	60 1/2	65	
State Telegraph Co.	29	30 1/2	
GAS COMPANIES.			
San Francisco Gas Co.	60 1/2	65	
Sacramento Gas Co.	60 1/2	65	
RAILROADS.			
Sacramento Valley Railroad.	40	45	
San Francisco and San Jose Railroad.	59	60	
Central Railroad.	49	50	
North Beach and Mission Railroad.	49	50	
Front Street, Mission and Ocean Railroad.	—	18	
BANKING INSTITUTIONS.			
California Loan and Savings Society.	—	90	
Bank of Pacific Accumulation Loan Society.	—	135	
The Bank of California.	135	136	
INSURANCE COMPANIES.			
Fireman's Fund Insurance Co.	95	100	
Pacific Insurance Co.	130	131	
San Francisco Insurance Co.	130	131	
Northern Mutual Marine Insurance Co.	130	131	
California Insurance Co.	1350	1750	
Union Insurance Co.	102 1/2	110	
California Home Insurance Co.	—	32	
Home Mutual Insurance Co.	—	90	
Occidental Insurance Co.	90	95	
National Insurance Co.	74	75	
MINING STOCKS—WASHOE DISTRICT.			
Alpha.	—	400	
Baldwin American.	—	300	
Belcher.	390	400	
Bullion, G. H.	39	40	
Crown Point.	1600	1620	
Confidence.	70	75	
Chollar-Potosi.	600	600	
Daney.	23	24	
Exchequer.	7	8	
Empire Mill and Mining Co.	110	115	
Gould & Curry.	570	575	
Hale & Norcross.	—	3100	
Imperial.	185	190	
Lady Franklin.	390	400	
Overman.	43	45	
Savage.	325	330	
Yellow Jacket.	1740	1750	
Golden Rule, California.	17	20	

## San Francisco Market Rates.

## Wholesale Prices.

FRIDAY, May 17, 1867.	Bid.	Asked.
Flour, Extra, 50 lbs.	\$5 00	\$5 25
Do. Superfine.	5 50	5 75
Corn Meal, 50 lbs.	2 00	2 25
Wheat, 50 lbs.	1 30	1 50
Oats, 50 lbs.	1 00	1 15
Barley, 50 lbs.	60	65
Wheat, 100 lbs.	2 00	2 25
Potatoes, 100 lbs.	7 00	7 50
Hay, 50 lbs.	7 00	7 50
Live Oak Wood, cord.	9 00	10 00
Beef, on foot, 25 lbs.	7 1/2	7 50
Butt, extra, dressed, 25 lbs.	9	10

Sheep, on foot.	4 00	4 50
Hogs, on foot.	5 1/2	5 50
Hogs, dressed, 25 lbs.	10	11
GOCKRAIAS, ETC.		
Sugar, crushed, 25 lbs.	13 1/2	14 1/2
Do. China.	9	10
Coffee, Costa Rica, 25 lbs.	20 1/2	21 1/2
Do. Rio.	20 1/2	21 1/2
Tex, Japan, 25 lbs.	70	75
Do. 25 lbs.	60	65
Hawaiian Rice, 25 lbs.	9	10
China Rice, 25 lbs.	6 1/2	7
Coal Oil, 25 gallons.	55	57 1/2
Andies, 25 lbs.	16	17 1/2
Ranch Butter, 25 lbs.	21	24
Butter, 25 lbs.	20 1/2	21 1/2
Cheddar, California, 25 lbs.	12 1/2	13 1/2
Eggs, 1 dozen.	22 1/2	23 1/2
Lard, 25 lbs.	13	14
Hams and Bacon, 25 lbs.	13	14
Shoulders, 25 lbs.	8	10

## Retail Prices.

Butter, California, fresh, 25 lbs.	20	40
Do. pickled, 25 lbs.	25	40
Do. frozen, 25 lbs.	20	40
Do. No. 1, 25 lbs.	35	40
Cheddar, 25 lbs.	15	25
Honey, 25 lbs.	20	40
Oil, 25 lbs.	15	40
Lard, 25 lbs.	15	40
Hams and Bacon, 25 lbs.	18	22 1/2
Crabapples, 25 lbs.	10	15
Onions, 25 lbs.	10	15
Potatoes, Sweet, 25 lbs.	1	5
Tomatoes, 25 lbs.	1	5
Onions, 25 lbs.	3	5
Do. No. 1, 25 lbs.	8	10
Pears, Table, 25 lbs.	8	10
Plums, dried, 25 lbs.	11	15
Peaches, dried, 25 lbs.	13	18
Onions, 25 lbs.	10	15
Lemons, 1 dozen.	75	80
Chickens, 1 dozen.	50	75
Turkey, 1 dozen.	20	25
Soap, 25 lbs.	8	10 1/2
Soap, Castile, 25 lbs.	1	18

## San Francisco Metal Market.

## PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.		
FRIDAY, May 17, 1867.		
Iron.—Duty: Pig, \$9 per ton; Railroad, 60c; 100 lbs; Bar, 1 1/2c; 25 lbs; Sheet, 1 1/2c; 25 lbs; Pipe, 1 1/2c; 25 lbs; Galvanized, 2 1/2c; 25 lbs.		
Steel and English Pig Iron 25 tons.	\$32 50	\$35 00
White Pig Iron 25 tons.	30 00	32 00
Refined Bar, bad assortment, 25 lbs.	—	—
Refined Bar, good assortment, 25 lbs.	—	—
Butter, No. 1 to 4.	—	—
Plate, No. 5 to 9.	—	—
Sheet, No. 10 to 12.	—	—
Sheet, No. 14 to 20.	—	—
Sheet, No. 21 to 27.	—	—
Corrugated.—Duty: Sheathing, 35c; 25 lbs; Pig and Bar, 25c; 25 lbs.		
Sheathing, 25 lbs.	—	—
Sheathing, Yellow.	—	—
Sheathing, Old Yellow.	—	—
Boils.	—	—
Composition Nails.	—	—
Tin Plates.—Duty: 25c per cent. ad valorem.		
Plates, 1 C. C. Corrugated.	13 00	—
Roofing Plates.	11 00	—
Banca Tin, Slabs, 25 lbs.	—	—
France.—English Cast Steel, 25 lbs.	12 50	15
Quicksilver.—25 lbs.	—	—
For export.	—	—
Zinc.—Sheet, 25 lbs.	—	—
Lard.—25 lbs.	7 1/2	8
Sheet.	—	—
Pipe.	—	—
Bar.	—	—
Borax.—California, 25 lbs.	20	23

STEAM PLOWING IN ENGLAND has arrived to great excellence, and is largely practised. There are now some 400 steam plows at work there, by which about 230,000 acres of land are cultivated. The steam plows eat only when it is at work, does its work better, turning up the ground deeper and more thoroughly, and turns off vastly more work in proportion to the food (fuel) which it eats, than horses or oxen can do. England is far ahead of the United States in steam plowing. The 400 plows there do the work of 2,500 horses. Coal is more readily obtained there than either oats or hay. The great Fowler steam plow has been in successful use in England for the last ten years, and is capable, in all kinds of weather, of going thoroughly over an acre of ground every hour of the day. The one at New Orleans, which was recently sent over to this country, was constructed at a cost of \$12,500, and was sent for the purpose of being tested on the immense plantations on the banks of the Mississippi. Nearly all the English steam plows are driven by small stationary engines, which are transported from field to field; the plows are fastened to an iron or steel wire rope, which is drawn from one side of the field to the other by means of a clipped drum connected with the engine.

THE CHIGNONS.—The outcry that has been raised against the "chignons," according to the Eastern papers, is spoiling the business in New York. The Broadway shops that deal in them are losing their customers, and in more than one case orders have been issued to stop their manufacture. The importation of the raw material also will probably exhibit a sudden falling off.

NEW INCORPORATION.—May 15th.—Market street Homestead Association. Capital stock, \$72,000; 160 shares of \$450 each. Trustees—Wm. C. Stevens, Robert Mayers, Henry C. Squire, H. A. Gorley, M. S. Osterhoudt, Warren Holt, S. Theodore, H. E. McBride and J. S. Luty.

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- II. Diagram, Description of Diagram and Boundaries, and Notice.
- III. Register's Order for Publication—with Notice.
- IV. Deposition that Notice has been Posted.
- V. Application for Survey Etc.

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THE PROPRIETORS are at all times prepared to work or test Ores to this establishment—either in large or small quantities—by such process as may be found best adapted to their chemical character, after a careful analysis has been made. Test lots of Ore adapted to the smelting process attended to. Sulphuric, pyrites, and the so-called "rebels" ores, are having especial attention paid to their successful treatment. Assaying in the humid and dry way. Also, refining by cupellation, done at moderate rates.

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THE UNDERSIGNED HAS REOPENED METALLURGIC Works, and is prepared to reduce any kind of Ores, by Smelting, Amalgamating, or other processes, that the nature of the ore may require.

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SAN FRANCISCO.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the Silver Mountain *Bulletin* of May 4th: The following companies are at work in Silver Mountain Dist.: Illinois, California, Mountain, Washington, Lady Elgin, Pennsylvania, Balacava, and I. X. L. Several other companies will commence as soon as the "dead-heads" can be worked out through the operations of the "Partnership Mining Law." The present appearance of the Balacava Co. is very flattering to stockholders.

## Butte County.

From the Sutter *Banner* of May 11th: A piece of gold weighing fifty ounces was recently taken from the Willard claim.

## El Dorado County.

From the Placerville *Courier* of May 11th: A shaft has been driven down 298 ft. on the Pacific mine, and a clear white quartz, with a green stain, has been struck, which promises well.

Messrs. Dayton & Durning, of San Francisco, have contracted to run a tunnel, 1,200 ft. in length, on Fryer's claim, Negro Hill. They feel confident of having the work completed by the 1st of June next. When completed they will use 200 inches of water. The cost of the work is \$10,000.

The south extension of the Shepherd lead, in Poverty Point Dist., is turning out some very rich rock.

From the *Democrat* of May 11th: The Stillwagon mine is running regularly, and the quartz averages \$30 per ton. The Independence Co. have made one run, and their rock paid \$26 per ton—working second-class ore. The Olive Branch is producing some fine ore, and promises to be a rich ledge. The Missouri Co. have opened a fine vein, which prospects rich. The ledge averages two feet in width. The Texas—a ledge recently discovered by Mr. Magruder—at a depth of 35 ft. shows a vein one foot wide, of very rich ore.

## Los Angeles County.

The Los Angeles *News* says: Rich gold bearing quartz rock has recently been discovered near San Francisquito, a few miles from Los Angeles.

## Mariposa County.

From the Mariposa *Gazette* of May 11th: The mine or quartz vein located near Bull creek, and owned by Black and others, has been purchased by John Hite, of the Cave, and Mr. Kerrins, of this place, for \$3,660. The rock will average from \$15 to \$18 per ton.

Work has been commenced on the Princeton mine. The work now being done is preparatory to regular mining operations. Only ten men are employed at present. The mill will be running in three or four weeks.

## Nevada County.

From the *Transcript* of May 9th: Evans, Mull & Co., of Birchville Mining Dist., cleaned up, in their gravel claim, \$19,700. This is the claim that Stidger & Clark, for a fifth interest, paid \$10,000.

Work has been suspended on the Lucky mine, owing to a want of harmony in the management.

From a neighboring small mining camp, \$11,000 was shipped in a single week.

After a run of five weeks, the French Co., at North Bloomfield, took out \$7,100.

The English Co., at Badger Hill, Cherokee, at the last clean-up, averaged a profit of \$5 to the man.

The Russian mine, on Manzanita Hill, Bridgeport township, at the last clean-up, after a four weeks' run, got \$1,900, giving a dividend of \$360 to each of the owners after paying expenses.

Binsley & Bro. found in their sluice, at Kentucky Flat, a specimen worth \$60; also four other pieces, worth \$7, \$12, \$14 and \$15.

Thompson & Co., at Badger Hill, three miles below Newtown, struck their gravel lead very rich last week.

The Washoe Co., on Hill's Ravine, one mile west of Newtown, have also struck it very rich.

From same of 10th: There is considerable activity at Alpha, and a number of companies are at work. A German Co. near Omega commenced operations upon a claim that never paid anything before, and cleaned up, in one week, nearly 15 pounds of gold.

The miners at Whisky Flat are hard at work, averaging \$8 a day.

The companies on Rocky Bar are getting the water out of their mines, preparatory to starting in.

Poorman's Creek, for a distance of between four and five miles, is being worked with good results.

The new mill at the Pittsburg mine is in

operation. The company have out 200 tons of quartz, which they are now crushing.

The owners of the Jim ledge, on Gascon Ridge, started work last week.

The Daylight and Mary Jane ledges, of the Tecumseh mine, is yielding splendid looking rock.

Same of 11th: A specimen of sulphuret rock, weighing 100 pounds, taken from the Cornish mine, will pay \$25 per ton, and the sulphurets \$100 per ton.

Same of 12th: The Noramhagua mine, at Forest Springs, cleaned up \$5,000 from 70 loads of quartz, averaging \$64 per load.

Same of 15th: Several companies have commenced working the bed of Deer creek for a distance of two miles from the mouth of Wood's Ravine. Leath & Co. and Hawke & Co. are getting ready to work the bed of the creek at Stocking Flat. Richards & Co.'s Uriel lead, on Deer creek, have struck a rich seam, which is believed will pay from \$75 to \$100 per ton. The tunnel is in 1,430 feet.

From the *Gazette* of May 10th: The sulphuret works of Robert Cash, Grass Valley, have been destroyed by fire. The loss is between \$2,000 and \$3,000. He has contracted for rebuilding.

John R. Rush has leased the Lady Franklin mill, at Boston Ravine, to T. Cracklin and Joseph Southard for one year.

Same of 11th: The Green Emigrant claim, near Auburn, is paying astonishingly. A cigar box of gold was washed out of three pans of decomposed rock.

Same of 14th: Merrow, Cobb & Co., hydraulic miners at Scotch Flat, cleaned up last week, after ten days run, \$2,150, showing an improvement in the last run of \$350.

From the Grass Valley *National* of May 13th: During thirteen months ending January 1st, 1867, Hooper & Co., at the Gold Hill mill, in Grass Valley, crushed 105 lots of rock, 2,500 loads, which yielded \$70,000.

The Union Jack Co. turned out a lump of gold, the proceeds of three weeks crushing, valued at from \$6,000 to \$7,000. The rock was crushed at the Lone mill.

EXCELSIOR.—From the *Territorial Enterprise*, May 7th: The Montreal mine, Meadow Lake, have 200 tons of ore ready for crushing. Their mill will start about the 25th. The last crushing of 163 tons, yielded \$29.40. The U. S. Grant mine, Carlisle, after a week's run, cleaned up between \$1,500 and \$1,600. Assay of ore from the Mohawk and Montreal mine, gold, \$159.26; silver, \$2.83; total \$161.09. The California Co. have struck some very fine looking rock.

From the Meadow Lake *Sun*, May 11th: The Mohawk mill will be ready to start by the 1st of June. The Gold Run Co. have struck better ore than ever before. The Golden Eagle threw out at a single blast two tons of rock, in all of which coarse free gold was visible. The California Co. are now down about 100 ft.; the ledge is nine feet wide. The Trustees of the Excelsior Co. have decided to commence work immediately. Other companies are making preparations to begin work in a thorough manner.

## Placer County.

A nugget of solid gold, weighing 36 ozs., was taken out of the claim of two Germans, Joe and Chris, between the north and south forks of Weber creek.

From the *Stars and Stripes* of May 8th: The 10-stamp mill at the Rough & Ready claim, has been moved to Smith's Point and rebuilt. The Oro mill and mine are ready to go into operation.

W. H. Sears and others have purchased the Westchester claims; price, \$10,000.

Messrs. Cray & Coates intend building a mill about a quarter of a mile above the Westchester.

The Green Emigrant claim is massively rich. The ledge consists of a hard, white quartz, over three feet in thickness. Slabs and wedge-like pieces of quartz are found spangled and seamed with gold. The decomposed quartz found will average from \$150 to \$500 to the pan. Lowery & McCarty have commenced operations with their arastras, and expect to make the largest clean up ever heard of in California.

Colfax letter of May 10th to the Dntch Flat *Enquirer* says: The Rising Star Co. have resumed work. The rock taken out, it is believed, will pay \$56 to the ton. Eighty-five ft. of this claim was sold at Administrator's sale, and brought \$12.50 per foot. The claim of John Sutton & Co., from eight tons of rock, recently crushed, yielded \$16.50 per ton. Ditton & Co. are still at work on their claim. Walker & Co. have ceased operations, owing to misunderstandings.

There are 26 ditches in the county, supplying the mines with water, which originally cost \$1,628,000.

## Plumas County.

From the Quincy *National* of May 11th: The Mammoth ledge near Eureka mills, has lately prospected immensely rich; the pro-

prietors intend putting up a new mill. The water shaft in Sherman & Co's mill, at Argentine, was broken a few days ago, causing a short delay.

## Sacramento County.

From the Folsom *Telegraph* of May 11th: We learn that Milgate's new quartz mill, at Wall diggings, is running on rock from the Milgate claims, and is paying well.

## Shasta County.

From the Shasta *Courier* of May 11th: At a miners' meeting held at Ellsworth's mills, South Fork Dist., it was resolved that claim holders should define the limits of their ground within 60 days, and in case of failure, they are to be considered abandoned ones. Also, that sinking a shaft 25 feet on any claim should give the owner perpetual title.

The work on the South Fork mine is progressing. In addition to that already shipped, they have 11 tons ready for transportation. Crystal rock looks and prospects very rich. The Ohio, Pacific and Crystal extensions show fine rock, and bid fair to yield well. Work has been commenced on the Red Warrior. The stockholders are determined to keep the work going, so as to test the paying qualities of the mine.

Jollie & Dosh have commenced on rock taken from their claim at Muletown. They feel confident of doing well.

## Siskiyou County.

From the Yreka *Union* of May 4th: Mr. Sam Clary has been taking some handsome nuggets lately from his claim in Rock Gulch. The largest piece found weighed 12 ozs. There were several other chunks of several ounces each.

## Sierra County.

From the Downieville *Messenger* of May 11th: Mining prospects at Gibsonville and Newark are looking more favorable than for several years past. At Charcoal Ravine, several new claims are prospecting rich. A party from Downieville have jumped one of the old claims in this vicinity and are about going to work. Many new claims have been located between Gibsonville and La Porte. The sluice of Mr. Fisher, of Indian Valley, was robbed of \$500. Charlton & Co. was robbed of \$300; supposed to be by Chinamen.

A company of Frenchmen found a nugget weighing a little over 22 ozs. in their claim, just below the Cascades Sawmill, on the Middle Fork.

## Yuba County.

From the Sacramento *Bee* of May 14th: The Blue Gravel claim, at Smartsville, Yuba county, cleaned up \$75,000 after a run of 30 days. There is a material change for the better in the prospects of the Rattlesnake (Old Yuba) claim, Brown's Valley. One-fifth of the Union Co's claims, Long Bar, No. 2, Foster Bar township, has been sold at auction.

## ARIZONA.

From the *Miner*, April 20th: The average yield of gold from all parts of Arizona, in the aggregate, is from \$4,000 to \$5,000 per day. Major Coffin, of the Bully Bueno mine, is said to have met with good success in financial arrangements in Philadelphia. He is expected back in June.

The San Bernardino *Guardian* of May 11, says that there is but one mill now running in the Territory—the Wickenburg. It turns out about \$8,000 per week. After five days run \$7,500 was cleaned up.

## COLORADO.

The *Weekly Times* of April 23d, says that mining matters on James creek were looking extremely bright. Two arastras, one belonging to Wood & Mallory, and the other to Blivin & Brown, had been running two days, and were working finely. Dixon, Patten & Beebe's 12-stamp mill is being put up, and will be ready to commence work in 15 days. Mr. Gray has two small smelting furnaces completed, capable of manipulating 800 pounds of ore per day. From 400 pounds of ore from the Buckhorn lode, 5½ pounds of lead were obtained, which cupelled 4½ pounds of bullion. Scores of gold paying gulches will be thronged in Gilpin and Clear creek this summer.

This week, the Gunnell Co's mill yielded two or three ozs. of gold to the cord more than the previous week's run—145 ounces, worth \$3,000. A bed of fire clay has been discovered within four miles of Denver. It is 300 ft. long and 40 ft. in width.

The California Reduction Works have turned out, at the Excelsior mill, three bricks. One was from 1,000 lbs. of quartz from the Foot & Simmons' lode, worth \$56.63; another was from 1,500 lbs. of ore from the Pewabic, 251 ozs., worth \$38.37, and the third from the Crawford County lode, 2,000 lbs. ore, 4.27 ozs., \$65.40. The Gunnell Co. took out, during the week ending April 22d, 145 ozs. of gold; the Smith & Parmelee, 66 ozs., and the Chemung Co., 36 ozs.

The Quartz Hill tunnel is in 127 ft. The Black Hawk Co's mine never looked better than at present. The mine is turning out the best class of ore.

From 700 lbs. of silver ore from Georgetown, which was treated at the California Reduction Works, there were 40 lbs. of amalgam obtained, which will net about seven lbs. of pure silver.

Keith's mill is running on ore from the Foote & Simmons. Its yield for this week will amount to 150 ozs.

Among the latest mining news on the Upper Missouri is the discovery of very rich and extensive copper deposits in the valley of the Muscleshell, about sixty-five miles from Helena, Montana.

Fifty feet of the Amberg lode, Russell Dist., owned by Mr. Jones, has been sold for \$500. Mr. Robert Treats recently exhibited on the streets of Central three bars of gold, whose value was \$160.40—the product of 4,500 pounds of ore from three different lodes. Mr. J. W. Watson has organized a company in Philadelphia to work on the Baker lode, Argentine, and is now en route here with the necessary funds for a vigorous campaign this summer.

## IDAHO.

From the *World* of 27th: At a miners' meeting, held at Buena Vista Bar Dist., on Thursday, April 18th, it was resolved that all mining grounds, such as bar, gulch or hill claims, be laid over until the price of water is 30 cts. per in., and dump can be obtained, and notice of such claims be recorded on or before the first day of May of each year, and that all drifting claims be laid over from the first of March to the first of September. Also, that ground owned by persons who shall be absent from the district six months, shall be forfeited, unless the ground be left in charge of an authorized agent, and notice thereof placed on the Recorder's books.

Boise Basin can yield steady and good paying employment to hundreds of miners yet—there is no hazard here. The mines are extensive, and have proved rich and enduring.

The mining season has commenced sufficiently to enable us to judge of the work to be done this season. Down along the Bar over 200 men are at work, whose most sanguine expectations have fallen far short of the actual yield. A merchant who watched the washing of a single panful of winter drifting, assured us that there was not less than \$500 in the pan. Persons from the North Fork of Elk Creek assure us that the same condition of things prevailed at that place. The same report comes from Moores Creek. Observations on the Bonner Hill satisfied us that equally large products are realized there. Murphy and Highland cleaned up on Monday after a four days run, and got \$1,840. After an eight day's run, Mr. Donnelly on the old Canley claim made a clean up, and got about \$2,300. Water is furnished at 50 cts. per in. for 24 hours. On Moore's Creek, Elk Creek and all around Centerville, Boston, Placerville, Granite Creek, Pioneer, Muddy, North Fork of Elk, Gold Hill and Willow Creeks, the products of gold is above the average of the best mines of California. There are vast placers which have never been worked, which will yield from above the average to very large wages.

From the Owyhee *Avalanche* of May 4th: One of the Iowa companies under the superintendence of Mr. Jos. Gafford is running a tunnel to strike the ledge. Another under Uriah Perry is sinking a shaft just north of the discovery, as a prospect and preliminary to the permanent working of the ledge. Fred. Warnke & Co. have commenced sinking on the Leviathan.

The Rising Star mine is all it has been represented in size and richness. Ore is being taken out by Carter & Co.

W. B. Scott is prospecting for the south extension of the Sherman, and Don Vincent & Co. for the other—the latter's tunnel being in over 100 and the former 40 feet. Whisky ledge is yielding rock of a high grade of richness. There must be 10 tons of rock out that will yield an average of \$300 per ton. It contains much free gold and whole masses of it are sulphurets of gold and silver. The ledge is owned by Eastman, Edgerton, Townsend and others, who are working it. The vein is two feet thick near the surface.

## MONTANA.

From the *Post* of April 27th: The Gold Mountain lode situated in New York Dist., has a shaft on it to the depth of 70 ft., with a crevice 10½ ft. wide. The quartz will average about \$40 per ton. Dick Cook has a quartz mill which will be soon have on the Legal Tender lode, in Brown's Gulch, Madison county.

A small stampede started a few days since for Meadow Creek, on the Sterling road. From parties returned, we learn that on



North Meadow Creek, there are thousands of acres of bars in which color can be struck at any point. These bars are from 40 to 50 ft. high, and the stream furnishes sufficient water for hydraulic mining, with, it is believed, sufficient prospect of good wages.

At Highland on No. 3, in Coolie's dry gulch, Mr. Harrington a few days since, washed out in three hours, \$197 in coarse gold, and a nugget weighing \$50.40. Camp Creek and Seven-up Gulch are being prospected with good results.

Taylor, Thompson & Co. have purchased a one-fourth interest in the ground known as the Idaho Co.'s claims, Last Chance Gulch; the price paid was \$2,200.

Water was let into the Law Yaw ditch on last Saturday, and sluicing will commence in the lower portion of Last Chance Gulch immediately.

Col. Postlewhite yesterday deposited \$2,200 in bullion, for the last run of the Hawkeye mill. Work is suspended for a few days, on account of the difficulty in hauling ore through the snow, now rapidly melting.

Turnley's mill in Grizzly Gulch, cleaned up on last Tuesday \$4,000 from 70 tons of Whitlatch Union ore, which is within a fraction of \$60 to the ton.

The ore now being smelted by the Esler Mining Co.'s smelting works, is from the Legal Tender, which is at present the best paying ledge in the district. The Bannack Ditch and Mining Co. are cleaning out their aqueduct, for the accommodation of 3,000 in. of water; the ditch attains an altitude of 1,000 ft. at its head, and 400 ft. opposite Bannack.

From the Helena Gazette of April 20th: The water of the Silver Bow Ditch Co. will be furnished to holders of scrip as soon as the mining season opens. The waters are brought in from Divide Creek, a stream running nearly on top of the divide. This is one of the best districts in the Territory, with rich quartz and extensive placer diggings.

A new company, entitled the Wheeling and Montana Gold and Silver Mining and Transportation Co., has been organized in Wheeling, Va., for the prosecution of work upon leads in the Hot Springs Dist. The capital stock of the company is \$100,000. Their machinery is on the road and will be in operation before fall.

The shaft upon No. 3 east, Gregory lode, is now 140 ft. deep, and the crevice at that depth is 16 ft. wide, containing throughout the entire width, ore of exceeding richness. The Argentine, Axe and others are promising as well. The work of developing the Beavertown copper mines is still going on, with encouraging prospects. The Caskey lode is now producing better rock than ever; they have their tunnel in about 80 ft., with a 5-ft. crevice.

#### NEVADA.

##### Humboldt.

A considerable excitement has prevailed in Star City, during the past week, on account of the discovery of gold in considerable quantities in the bank of Star Creek, at the foot of Yankee Hill, back of the Telegraph Saloon.

##### Reese River.

From the *Reveille* of May 2d, we learn that Maj. Sherman shipped recently 17 bars of bullion—\$18,313.55—from 70 tons of ore from the Florida mine. Average yield of the ore, \$261.62 per ton. Aggregate product of bullion by the Florida mine, since it came under the control of Maj. Sherman, is about \$60,000.

The South America mine, southeast of the Manhattan Co.'s works, is to be worked for a Philadelphia Co. Thos. Triplett will place machinery on the mine immediately, and adopt the best methods for its thorough working.

Water has been reached in the mines of Silver Bend, and a more splendid quality of ore disclosed. Water has also been met in considerable volume in the incline that extends from the tunnel of the Combination Co. at 260 ft. from the surface. Mineral obtained from the ledges under the water is pronounced to be of superior quality. High-bridge ledge is 22 ft. thick where the water was tapped. Further work on the incline has been abandoned for the present, and the mine will be worked through a perpendicular shaft.

The Silver Chamber, in Union Hill, continues to be explored. At the greatest depth of the incline, the vein is four feet wide of solid quartz. The shaft on the Hattie mine is progressing well. It is intended to sink the shaft 50 ft. deeper, and then run levels for the vein.

The Manhattan mill, at Austin, Nevada, produced in 11 days, the value of \$25,000.

From *Reveille* of 3d: J. W. Varney, Supt. Empire mill, at Yankee Blade, has reduced lately several lots of very rich ore, among which are five tons of chloride ore from the Fuller mine, producing a net yield of \$3,-

219.80; the assay of the pulp exceeded \$800 per ton.

Nine tons of ore from the North River were worked, the pulp of which assayed—five tons of chloride ore, \$479.67; four tons of sulphurets, at the rate of \$224 per ton. The Buel North Star sent three tons to the mill, the pulp of which assayed at the rate of \$311.50 per ton. One ton of chloride ore from the Monroe mine, Yankee Blade, yielded by pulp assay \$256.07 silver per ton. Two tons of ore selected from a dump pile, that had been lying two years, yielded \$100 per ton.

The owners of the North River mine propose to sink a perpendicular shaft to cut the vein at 1,000 ft., on the line of its inclination. Work will be commenced soon.

From same of 4th: The ore from the Green Mountain is pronounced very rich, and if closely assayed, it is estimated will yield from \$800 to \$1,000 per ton. The Rutland mill, capable of reducing six tons daily, is in steady operation. Quality of the ore reduced is excellent, and yields from \$100 to \$300 per ton. Mr. Brobant thinks the ore at the mill will yield \$20,000. The ore reduced thus far was obtained from the Mohaska, Green Mountain and Cadet, of the Rutland Co.

There was exhibited recently at the assay office of J. S. Currie, a certificate of assay of ore from the Green Mountain ledge, which showed the fine yield of \$971 of silver per ton. Three thousand five hundred tons of ore from the celebrated Fisherman ledge of the Bullion Co., was yesterday taken to the Empire mill for reduction. It is said to be \$500 or \$600 ore.

From same of 6th: The American Flag, in Mammoth Dist. is the first prospected to the depth of 150 ft., yet a 12-ft. vein has been disclosed that will work \$300 per ton. The Mount Vernon Co. reopened on the main shaft with three shifts, on the first of April. Maj. C. S. Gillett, Supt. of the Ural Co., has commenced a main shaft, 7x9 ft. in the clear, and located so as to cut the Gould & Curry No. 1, at the depth of 100 ft., and the Ural at 300 ft.

Three tons of ore from the Buel North Star was worked at the Keystone mill, the pulp assay of which yielded at the rate of \$380.93 per ton; the three tons produced a bar of bullion worth \$1,028.70, an average yield of \$342.90 silver per ton. The Fisherman ledge of the Bullion Co., continues yielding ore of wonderful richness. The ledge exhibits a stratum of four feet of \$200 rock; 3,642 lbs. have been taken to the Empire mill, the pulp of which was assayed by Messrs. Boalt & Stetefeldt, giving \$512.65 silver per ton.

From same of 9th: Samples of ore from San Antonio Dist., were recently assayed and yielded as follows: No. 1, \$360.98; No. 2, \$361.71; No. 3, \$380.74; and No. 4, \$298.59.

George Sites arrived from San Antonio to-day with 6,000 ozs. of bullion from the Rigby mill, the product of ore obtained from the Liberty mine.

From same of 10th: Four tons from the Brown ledge, Bunker Hill Dist., yielded 500 ozs. of bullion, worked in an anarstra. Silver Chamber shows by assay of first class ore, \$933.09; of the second class, \$157.03.

From the Silver Bend Reporter of May 4th: The incline on the Liberty mine, San Antonio Dist., is down 275 ft. The ore is worked at the Rigby mill, and yields from \$250 to \$300 per ton. Work in the Morey Dist. is progressing. One claim has been sunk on 160 ft.; vein about four feet; yields \$300. Work on the Combination Co.'s mines suspended on account of water. Body of ore is 20 ft. thick and surprisingly rich. Work has been resumed on the Quintera mine. Harrison & Co. have sold the Achilles ground, near the Transylvania, for \$30,000. Preparations are making for work at Danville.

A small lot of ore from the Amazon lode, Reveille Dist., worked in one of the Austin mills, produced \$275 per ton.

##### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise*, May 9th: The Cornet mill, Gold Hill, shattered by the bursting of a fly-wheel, will be removed to American City and rebuilt. Owing to the constant settling of the ground where it now stands the machinery cannot be kept level or in line. The foundation for the new hoisting works of the Empire and Imperial Cos., Gold Hill, is fast advancing to completion. The Crown Point Co. will build new hoisting works with modern improvements.

From the *Gold Hill News*, May 13th: Wells, Fargo & Co.'s Gold Hill office shipped five bars of bullion, weighing 328 lbs., valued at \$8,642.12. The following companies have

received bullion for melting and assay: Edwards & Weigand, 11,967 ozs.; Van Wyck & Co., 21,845 ozs.; and H. Harris, 1,170 ozs. Timbers for the mines continue to be scarce, and many of the mines are entirely out.

A quartz lode has been discovered in the hills  $1\frac{1}{2}$  miles from Carson. The lode is from 6 to 6 $\frac{1}{2}$  ft. wide, and is very rich with gold and silver. In an assay office at Virginia City is a brick valued at \$17,528.05. It is from the ore of the Imperial mine, and contains \$15,785.55 worth of silver, and \$1,742.51 of gold.

#### OREGON.

The Jacksonville *Sentinel* says that tunneling in Gold Hill is still progressing with good prospects of success. The ledge has been struck again, and the miners are running a shaft from the tunnel to the surface, a distance of 120 ft.

The *Sentinel* recently saw, at Mr. Beckman's banking house, a specimen of gold weighing \$510, which was obtained in the mines in that vicinity.

The *Oregonian* says that a very rich silver lead has been struck in the Cañonville mountains near Portland. A nugget of gold was taken out in the John Day mines, a short time ago, weighing \$404.

#### Smelt Your own Copper Ores.

It is one of the encouraging signs of the times to observe the growing disposition among the copper miners on this coast to smelt their ores, either at the mine or at some more convenient locality, and ship regulus instead of ore. There is no doubt but that, with all the drawbacks which appertain to California, with regard to high-priced labor, lack of good furnace material, high cost and inferior quality of fuel, etc., we shall yet be able to make the smelting of the sulphurets into regulus, and the carbonates and oxides into 90 or 95 per cent. copper, a profitable operation. With the projected increased facilities for transportation, and the influx of population, labor will gradually approach more nearly to the average of other countries; while closer observation will yet reveal to us better furnace material than any yet obtainable, and possibly a better quality of coal—all, or any of which advantages, will add gradually to the economy and profit of copper smelting, until we shall be able to produce that metal at a price and in quantities by which it can be successfully introduced into the great markets of Europe and Asia. The richness and extent of our mines, over those of any other country, will always be in our favor, and other things being equal, we must eventually control the copper market of the world.

It is well known that the yield of the copper mines of Great Britain has fallen off so rapidly of late that the smelting works of that country are in a large, if not the largest measure, dependent upon the product of the foreign mines. It has, moreover, been recently ascertained that at the present ruling prices of copper ores, the smelters are having it all their own way, and are getting rich at the expense of the mine-owners. So palpable has this fact become, that the mine-owners of England are calling upon the capitalists of that country to employ some of their surplus money in opening up new mines and extending the work of old ones, with the view of smelting their own ores—alleging that a mine that will smelt its own ores, can be made to pay a handsome profit, when the same mine would run in debt if it was compelled to sell its ores to the smelters.

Says a correspondent of the *London Mining Journal* of March 16th: "As a body the smelters of tin and copper have had it all their own way, and bought the produce of the mines on their own terms. \* \* \*

Whilst very few mines are paying, the smelters are said to be some of the richest men in the kingdom." These are significant words for California, and should urge to still further efforts, on our part, to "smelt our own ores," and not sell them to English speculators, who, by a huge combination, have succeeded in reducing the price of copper ores to the lowest figure at which they can possibly be delivered to the end that they (the smelters) may reap all the profits derivable from the mines.

#### Order Bussey's Combination Burglar and Powder-Proof Keyless Lock!

##### REASONS WHY.

- 1st. It is the best Combination Lock known.
- 2d. It is impossible to pick it.
- 3d. It can be subjected to over half a million changes, and when run by a burglar, he is no nearer entrance than when he began.
- 4th. It has no key to lose.
- 5th. The more it is used the better it is liked.
- 6th. It has no signs, letters or figures, on its face.
- 7th. It is the simplest to understand.
- 8th. It is impossible to open it without knowing the set.
- 9th. It is least possible to get out of repair, as any one will be convinced on examination.
- 10th. It is the strongest Lock.
- 11th. No possible derangement of combination can be made.
- 12th. Amador County has adopted this Lock for its safes.
13. It received a special premium at State Fair.

##### REFERENCES:

R. COSNER, Sheriff.  
G. WALTHER, Treasurer.  
W. JENNINGS,  
C. H. INGALLS, Supervisors.  
L. McLAINE.

Any good blacksmith can put this lock on safe doors. Bored or single old locks removed and this placed in their stead, to work one, two, three or four bolts, as the case may be.—[See page 30 in Pacific Coast Directory.] A deaf or blind man can open this lock when he knows the set and understands the full manipulation, without any expert detecting the combination.

#### Opinions of the Press and others in regard to Bussey's Combination Lock.

The Bank of British Columbia ordered the first one of these locks introduced in this city, and the following recommendation has been received by the inventor:

##### BANK OF BRITISH COLUMBIA.

San Francisco, May 24, 1866. }  
Recently, two of Wm. C. Bussey's new Patent Combination Burglar-Proof Locks were placed upon the vault doors of the Bank of British Columbia. They are found to operate with all the efficiency claimed by the inventor, and in every way meet our fullest approval.

They were ordered upon mature deliberation, after strict investigation of their merits, in comparison with some of the most noted and popular old styles of combination locks.

We deem the lock entirely burglar-proof. It is strong in construction, without intricate or delicate parts, with simple and easy movement. We find no difficulty in either opening or closing it, nor in changing its combinations, which may be made almost innumerable.

As a California invention of extraordinary merit, we take pleasure in recommending it to public attention, believing it to possess all the advantages which are claimed for it.

WM. H. TILTINGHAST, Sub-Manager.

We do hereby certify, that Wm. C. Bussey's Combination Lock is the best Safe Lock in existence, and impossible to be picked. We have applied several times to Vaults and Safes, to entire satisfaction of the parties interested.

KITTREDGE & LEAVITT,

Pioneer Iron Works, cor. Fremont and Market sts.

SAN FRANCISCO, May 6, 1867. }  
I do hereby certify, that Mr. Wm. C. Bussey's Combination Lock is the simplest and strongest in construction, and the least possible to get out of repair; and for Safes and Vaults in every other respect as good as any other improved combination lock which I am acquainted with.

JOHN R. SIMES,

Vault Manufacturer, Oregon street.

JACKSON, April 27, 1867.

I, the undersigned, Sheriff of Amador County, do hereby certify that I am using one of Wm. C. Bussey's Keyless Combination Locks on my safe, which is made to draw four bolts with facility. I believe the lock to be the best lock ever invented, for the following reasons:

1st.—Because it is impossible for either burglar or expert to pick it.

2d.—The lock being constructed without a key-hole, it cannot be blown to pieces by powder.

3d.—There is no possibility of deranging the combination by breaking off, or attempting to drive the knobs into the safe. And it is in fact the nearest approach to perfection yet arrived at in the art of Lock making.

R. COSNER.

Attested by J. C. SHEPMAN, County Clerk.

JACKSON, April 27, 1867.

The undersigned, Treasurer of Amador County, do hereby certify, that I am now using one of Wm. C. Bussey's Keyless Combination Locks. It is fastened to the outside door of the Treasurer's Safe. I have no fear of any bystander gaining a knowledge of the set of the combination, when locking or unlocking the same. If I desire to have access to the safe every few minutes, I can so adjust the combination as to open this lock in two seconds of time. I am exceedingly well pleased with the same, and I deem this lock to be all that the inventor claims for it.

OTTO WALTHER.

Attested by J. C. SHEPMAN, County Clerk.

CALIFORNIA LOCK AHEAD.—A special premium was awarded Mr. W. C. Bussey, for his superior Combination Powder and Burglar-Proof Safe Lock, at the recent State Fair. We are sure no award was ever more meritoriously bestowed. This Lock was described at length in the *Press* several months since. At that time it was adopted by several banking houses in this city, and we are now assured that the remarkable claims asserted in favor of the Lock at that time, have been confirmed since by its practical use. We feel an interest in this California invention, and wish to see it speedily meet with the success it is ultimately certain to attain. Mr. Bussey, having properly first fairly tested his lock in California, is now desirous of introducing it in the East, and offers to dispose of the right for several States at very reasonable rates.—[Mining and Scientific Press, Sept. 29, 1866.]

They are the only SAFE LOCK ever invented. Every State and County treasury vault, and every bank and business place should have one.—[Amador Ledger.]

This is a lock in which a series of rotating annular tumblers is employed, and it consists in a novel arrangement of such tumblers in connection with one or more arms connected with one or more bolts, whereby an extremely simple and effective lock is obtained, presenting an almost unlimited number of combinations. For which it was awarded a special premium at the State Fair.—[Sacramento Union.]

We, the undersigned, practical Locksmiths, unhesitatingly pronounce Bussey's Improved Combination Burglar Proof Lock to be the most reliable lock constructed.

F. MARKT & C. FLEISHEL,

1974my11&13.1am No. 18 Post street.



## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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## Canvassing Agents.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office.  
San Francisco, Jan. 11th, 1866.

**Mr. L. W. Fenton**, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1866.  
**Mr. E. L. Smith**, is a duly authorized Agent for this paper, February 23, 1867.

## San Francisco:

Saturday Morning, May 18, 1867.

## Notices to Correspondents.

A SHAFT SINKER may rest assured that the mode described in our number for the 27th ultimo, which was first adopted by M. Triger for penetrating water-saturated and porous strata, is not only perfectly safe and practicable, but we learn by some European exchanges, received since the former article was written, that the example has been followed in other places. Advertising to M. Triger's system, Prof. Smyth, in a recent lecture at the School of Mines, London, has furnished the following interesting particulars: "Many scientific men said the idea could not be carried out in practice; and, amongst others, the Academy at Paris gave the matter their serious consideration, and came to the conclusion that it would have a most prejudicial effect on the health of the workmen; but M. Triger, to show his confidence in the system, had taken his turn at the work himself. At a depth of eighty-two feet from the surface, however, the men engaged in the operation seemed to get to a sort of equilibrium; they had got to as high a pressure as they could bear, and yet scarcely made any head against the water. If they put on a higher pressure, the air was forced through the adjoining strata, and rose in bubbles to the surface. By some means, however, the watery bed was successfully passed through, and then, a water-tight joint being effected, all difficulty was at an end. This method had since been adopted in several instances, but it was necessary to be very cautious at certain points. One difficulty which had been experienced was, that if there was very great pressure below the air chamber, the latter would be forced up the shaft, and hence one or two rather awkward cases had occurred in which it had been forced upwards, and borne with it a quantity of tubing which had been completed. This had been remedied by keeping the air-chamber very near the surface, and laying across it very strong iron beams, and weighting it with pig iron. Another serious matter in connection with it was, that in consequence of the great accession of oxygen in the compressed air, it created a tendency to combustibility; and hence the candles used by the men burnt away very fast; and several accidents had occurred, owing to this property of the air, which had not been thoroughly explained—an explosion having occurred in one case and a man hurried to death in another. It had been stated that several men had died who had been engaged in the works at the Albertbridge, Plymouth, where this method had been adopted; but he felt bound to say that M. Triger's evidence went distinctly to prove that if the men were taken proper care of, and were not accustomed to drink, no inconvenience would result; but their health might be affected if they were taken too suddenly into the open air; consequently he made it a rule to make the change from the shaft to the surface very gradually. M. Triger had told the lecturer himself that he had remained in the shaft a considerable time subject to a much higher pressure than any of the workmen—even as much as four and a quarter atmospheres, or 68½ pounds to the square inch.

COMMUNICATIONS RECEIVED.—"Mining at Virginia City and Austin," by Dr. DeGroot; "Revolving Calciners," by Prof. Chas. S. Richardson, of New York; "An Explanation of the Pewabic Electric Phenomena," by F. A. Herring.

## Quicksilver Production in California.

The various products of our State, whether obtained directly from the howels of the earth or from its prolific surface, or whether produced by the handicraft of our mechanics and fabricated at our doors, as articles of necessity for immediate use, or as aids in developing some other branches of industry, have ever received notice and encouragement in the columns of the PRESS, in some measure proportionate to their value and usefulness. Whatever production enables us to go to market and obtain that which we require, is fully equal, according to its value, to so much gold and silver produced from our mines.

No country, state or people, can long stand a drain on their circulating medium to pay for products from abroad, unless engaged in some more remunerative occupation at home. Cotton was once the great staple of the United States; but the price of that article has of late become so high, and its product so small, that our people have for several years been compelled to look to other sources for a medium to equalize their foreign exchanges. The mines of the Pacific coast seem to have come in most opportunely to relieve the country from what, during our late domestic strife, threatened to become a most serious embarrassment. The product of our mines, shipped abroad, places us on the best of footing for purchasing in any market, and whatever tends to curtail that product, no matter how trivial in extent, must be looked upon in the light of a public calamity, to be measured by the effect produced. It is upon gold and silver, chiefly, that we must rely for the means to pay the interest on the national debt, which now amounts to a sum more than three-fold the total of our ordinary expenses before the War of Rebellion.

In the production of gold and silver bullion, quicksilver is an article of indispensable necessity; without it our mines could not be developed, and the government would be deprived of its most ready and almost only available means for meeting the interest upon the national debt, for which the faith of the nation has been pledged. A low price for quicksilver will cause a greatly increased consumption of the article, and a corresponding increase in the production of bullion. Hence, one of the most effectual means to increase the yield of gold and silver is to decrease the price of quicksilver; and he who effects this object must be looked upon as a public benefactor; while, by parity of reasoning, he who unnecessarily advances the price, must be regarded as anything but a philanthropist or patriot.

These reflections have naturally grown out of a careful perusal of the recently published annual report of the Quicksilver (New Almaden) Mining Company. This report is certainly a most suggestive document. It appears therefrom that the company is at present engaged in executing a contract with Mr. W. E. Barron, for the delivery of fifty thousand flasks of quicksilver, at \$30 per flask. This quicksilver, when delivered in London, will cost Mr. Barron about forty-five cents per pound. He will probably sell it for about fifty-two cents—the present price in that market; so that a miner in England will obtain California quicksilver, which has traveled 18,000 miles, for eight cents per pound less than a California miner pays for the same article within fifty miles of the mine where it was produced! A short time since, our miners were paying seventy-five cents; but the price has recently been reduced to sixty cents. California miners must feel grateful for the concession—by which they have now to pay only ten cents more on the pound for quicksilver, instead of twenty-five cents, as formerly, over what it can be bought for in London.

But the report says there has recently been a decline in the price of quicksilver, in London, of about \$5 per flask. We have not heard of it through any other source.

If such is the case, however, perhaps some of our merchants may find it for their advantage to go to that city instead of to the agency in San Francisco, for their supply of Almaden quicksilver.

The report shows that the actual cost for mining, assorting and retorting, is \$16.15 per flask, to which amount is added \$7.60 for interest, permanent improvements, taxes, etc., making the actual cost \$23.75 per flask. Hence, it follows that any party who can produce quicksilver at a cost not exceeding \$23.75 per flask, can safely enter into competition with the Almaden company.

There appears to be a few more figures connected with this report, which are eminently suggestive. Taking the figures in this report to be correct, the average yield of the ore for 1866 was 11.62 per cent., and 13,442 tons were treated. This would probably involve the raising of not far from 40,000 tons, (as the dump pile or *tierra* would seem to indicate that about two-thirds of the ore raised is thrown to waste.) The total cost of producing 35,150 flasks (the yield of 1866) is set down at \$567,711. The cost of furnace work is not separated from the cost of mining; but by no fair estimate can the cost of treatment at the furnaces be set down at over \$15 per ton, which would leave \$366,081, or \$32 per ton of 2,000 pounds, as the cost for each ton of assorted ore, or a fraction over \$10 per ton for every ton of ore as it comes from the mine; this, it will be recollected, includes the cost of assorting after it is brought to the surface. As the Superintendent suggests that there should be at least \$10,000 per month expended for *dead work*, or "prospecting, and making communication between the different workings of the mine," we should naturally assume that there is a less amount now expended, than the sum asked for. It will be interesting to compare the cost of raising ore at this mine with that of one of the principal mines in Virginia City.

By reference to the last annual report of the Gould & Curry Co., we find that the total cost of raising the ore from that mine for 1866 was a fraction short of \$8 per ton, (no account being taken of waste rock), while the amount of *dead work* performed exceeded \$23,000 per month! The amount of ore raised was 62,424 tons. Perhaps the disparity in cost of raising ore at the two mines may be owing to the difference in the class of labor employed. We think any miner who has visited both mines would say, that with the same amount of *dead work*, ore might be raised from the Almaden at much less than the cost necessary at the Gould & Curry. We may possibly greatly err in judgment, but at all events figures thus deducible from the report are certainly suggestive. There is also a lack of particularity in the report, as compared with mining reports generally, which is especially noticeable.

As intimated at the outset of this article, the production of quicksilver at the cheapest possible rate is a matter of public interest to this State; and it is from that fact alone, and not with the view of mere fault-finding or excess of curiosity, that we have thus (and possibly harshly) reviewed the report before us. It is to be feared that the publication of the report may operate to unreasonably deter others from entering into the production of this metal, who, by a proper and economic management might greatly increase the quicksilver yield of this State, and possibly materially reduce its price—either of which would be a great boon to the miners on the Pacific coast.

We would take this occasion to mention, as a decided encouragement for any persons who may think of entering into this business, that we have the best of reasons for believing that a great impetus will soon be given to the production of quicksilver through the agency of a new furnace for obtaining the same from the ore, recently invented by Messrs. Coult & Roach of this

city, and for which letters patent have been obtained through the Patent Agency connected with this office. Various samples of ore, from different localities, have been treated in a test furnace, erected to prove the principle, which have shown that the invention possesses most important merits, and that it is capable of effecting a decided saving over what appears to be the cost of obtaining the metal by the furnaces usually employed. With Messrs. Coult & Roach's furnace, less than two per cent. ores can be profitably treated and higher grades at a proportionate profit. We feel quite confident that with this improved furnace and a reasonable degree of economy in the mining department, ores can be made to pay largely that do not average one-third as much as those at New Almaden. This furnace is free from the objections which render those in present use deleterious to the health of the operators, while the amount of fuel required is less. The quicksilver is so volatilized and condensed that it is almost a matter of impossibility for a particle to escape into the outer atmosphere. This furnace is much less costly, and more convenient for management, than those now in general use. We cannot refrain from expressing the belief that its introduction on this coast will effect a complete revolution in the production of quicksilver, and give value to deposits of that mineral which cannot possibly be worked to a profit under the present expensive system.

## Foundry and Machine Work.

The foundries and machineshops throughout the State are now pretty generally full of work. During the past week we took a look through the Pacific Foundry, in this city, which establishment has been unusually driven of late—so much so that they have been obliged to run much of the time both night and day. In passing through the shops, we noticed a large amount of very heavy work being done there. The engine and boilers for the new Government steamer, now being built for the Quartermaster's department, are in quite a forward state of progress. This boat will be 100 feet length of keel, ten feet depth of hold, and twenty-one feet beam. She will be driven by a 250-horse power engine. All the modern improvements connected with marine engines and boats will be introduced into this steamer. Her cylinders will be partially steam-jacketed, and the whole engine will be of massive build for one of its class. She will have two fire-box boilers for making steam.

The large engine for the new rolling mill is also in progress of construction at this foundry. This will be one of the largest horizontal engines ever built on this coast. The cylinder will be twenty-five inches in diameter by three and a half feet stroke, and will be fully steam-jacketed. The fly-wheel will be twenty feet in diameter, and will weigh twenty tons.

The Petaluma steamer's shaft, which was recently broken and built up again at the Pacific Forge Company's works on Mission creek, was in the lathe as we passed through the machine shop. The America's broken shaft, which was recently rebuilt at the same forge, was also finished at this foundry.

## QUARTZ AND OTHER MILLS.

Among the other work in progress at this foundry is a ten-stamp mill for New Mexico, which is about ready to be sent off. Also, a ten-stamp cement mill for Forest Hill. This mill will be put up on a claim recently purchased by a San Francisco company.

A ten-stamp mill, with an iron hurdy-gurdy wheel, is also being built here for a location in the Humboldt river country, near the Oreana company's silver smelting works. A set of Varney's pans go with this mill.

A sugar mill, with engine, boiler, etc., has just been sent out from this foundry for a plantation in Tahiti.

They are also constructing the engine,



boilers, etc., for a flour mill, with four run of stones, now being erected by Coffin & Staudish, near Martinez, opposite Benicia.

They have also under way the machinery for a plant of smelting works, for argentiferous galena, to be put up by Gen. Banning & Co. in Sonora.

A lot of 100 large ingot molds have just been sent out from this foundry to the Orona Smelting Works, in Humboldt. Some idea of the immense amount of metal which is being turned out at these works may be inferred from the fact that when this order was sent in they already had 100 molds at the works, which have been found insufficient for their needs. By using even that large number, it has been found impossible to keep a sufficient number of cool ones by to receive the metal as fast as it is produced. Hence the last order of 100 additional.

A large lot of Varney pans are being finished off for the New York and Owyhee Mining Company, Idaho.

Several freight cars are being built for the Oregon Steam Navigation Company's Railroad, connecting the boats of this company above and below the rapids on the Columbia river.

Mr. Austin, the well known superintendent of these works, is the inventor and patentee of a most efficient quartz crusher, which is made and sold at this foundry, and which has elicited high commendations from various practical quartz millmen who have seen it in operation.

**A PLEASANT PLACE OF RESORT.**—We know of no place of resort in this city where a few hours may be more pleasantly or more profitably spent than at Woodward's Gardens, on Mission street. Both the Market and Howard street cars pass within a few rods of the entrance; and when once there, he or she who cannot be most agreeably entertained for an hour or two, or even several hours, can have but a very poor appreciation for the works of either nature or art. The proprietor of these gardens has had the good taste to secure his visitors from everything which can annoy even the most fastidious; for this reason it has become a most popular place of resort—even ladies, unattended by a male escort, can go there with the most perfect freedom from annoyance, and spend, if they like, the entire day. Strangers visiting the city, from the interior or from abroad, can nowhere spend a leisure day with more rational enjoyment than at these gardens.

**SAFETY OF PUBLIC ASSEMBLIES.**—The Legislature of Pennsylvania has passed some stringent laws with regard to the convenience of egress of public assemblies in case of fire. In addition to doors of common construction, the custom of blocking up the passages and doorways with chairs and benches is especially forbidden. That is as it should be. Our own Legislature should act in this matter. The manner in which the passages were blocked up at Union Hall, in this city, during the union prayer meetings, last fall, should never again be allowed.

**THE BILLIARD TOURNAMENT,** under the auspices of Messrs. Hughes & Strahle, the celebrated billiard table manufacturers, is now in progress at Congress Hall, Bush street, near Montgomery, in this city. The room has been fitted up especially for the occasion, and a large number of strangers and scientific billiard players are in attendance from various parts of the Pacific coast.

**HEAVY TELEGRAPH BUILDING.**—A great part of the first 800 miles of the Russian Extension Telegraph, north of New Westminster, is through a timber country filled with pines, some of which are 15 feet in diameter and 300 feet high. A swath 22 feet wide was cut through this timber, and the line placed upon poles standing in the middle of the open space.

## Home Trades and Manufactures.

**COFFEE AND SPICE MILLS.**—The business of preparing coffee and spices for the table is no insignificant portion of the manufacturing interest of San Francisco. They are now nine in number, chief among which we may mention the establishment of Charles Bernard, to which was awarded the first premium of the Mechanics' Institute, at their Fair for 1865. It is located at No. 708 Sansome street, and is one of the most extensive and complete in all its details of any similar establishment on the coast. We have already, in past issues of the Press, noticed this mill at length, giving a full description of the *mola operandi* by which the coffee berry and various spices are prepared, ground, packed and labeled for the market. Everything about this institution is neat and orderly, and the reputation of its coffee, in particular, stands No. 1 throughout the State. Very few people have any idea of the extent of this business. This single establishment has turned out 235,000 pounds of roasted coffee during the past year, in addition to pepper, ginger, cloves, mustard, etc. A large portion of this stock is disposed of in this city, although much of it finds its way into the interior of the State, and into Nevada, Oregon, etc. This establishment is well worthy of a visit from all who take an interest in the various manufacturing enterprises of our growing city.

**STEWART'S AIR-TIGHT COOKING STOVE.**—Prominent among valuable patents is ranked that of the Stewart air-tight cooking stove. For nearly twenty years this improved fuel-saver has maintained its leading position in spite of hundreds of other patents, many of which, we doubt not, possess their individual merits.

The Stewart stove is represented most extensively on this coast by Mr. Caleb M. Sickler, at 422 Kearny street, from whom we learn that, in all probability, half a million have been disposed of in the Eastern States and on this coast.

As a detailed description of these stoves may be seen by referring to the cover of the Monthly Series of the MINING AND SCIENTIFIC PRESS—copies of which are always to be found on the tables of the leading hotels and reading rooms of this city, and on the ferry-boats, steamboats and steamships running regularly from our wharves—we will only allude to one or two points for the sake of some readers in the interior. In addition to the advantages claimed in point of economy and durability, they possess a high degree of value as to the mode of ventilation—the front doors open directly into the oven, and thus secure a draft through the top of the same by means of perforated holes in the doors and back flues. The heat is not only controlled at pleasure—either being retained for use within the oven or thrown into the room, as circumstances require—but also, by means of a double-sheet bottom flue, may be made as even and efficient as could be desired.

The facilities they possess for supplying hot water for bath-rooms and other purposes, are equal to those of any range.

**HINKLE & CAPP'S IMPROVED AMALGAMATOR.**—In this machine, for which a patent was issued April 16th, 1867, the grinding is accomplished by means of a perpendicular grinding surface formed by the side dies being arranged against the walls of the pan; also by the peculiar shape and arrangement of the cover; by which a continual flow of the ground pulp from the circumference to the center is secured. It is so constructed that it may be made to work continuously from the battery, when desired. The improvements claimed are, 1st, The employment of renewable side dies; 2d, the use of perpendicular muller hangers, hung loosely on pins upon the arms of the central cone, and pressed laterally by centrifugal force against the perpendicular grinding surface, by which arrangement the pressure is light-

est at the feeding point, and heaviest at the heel, where the chief part of the grinding is done. These machines are said to be very effectual, wherever they have been introduced as triturators; always adapting themselves to their work, and requiring but a small quantity of power in proportion to the amount of work done. We hope to be able to give an illustrated description of this machine at an early day.

**GOODWIN & WEST'S REVOLVING CENTRIFUGAL CONCENTRATOR,** can be seen by millmen and others interested in the working of sulphurets, at the Franklin Foundry, Fremont street. One of the inventors, at least, will be on hand to exhibit the mode of working, and set forth the merits claimed for their invention.

**METALLURGICAL WORKS.**—We have received the business circular of Messrs. Secor, Swan & Co., proprietors of extensive metallurgical and chemical works at 336 and 338 West 28th street, New York. This firm gives special attention to the assay and analysis of mineral, waters, etc. Gold and silver ores are also worked in parcels of 500 pounds to ten tons.

**JACOB SIKK, Pioneer Photographer,** 512 Clay street, north side, four doors above Montgomery, (late 315 Montgomery street,) takes all kinds of Photographs in the best style of the Art. He would invite especial attention to the new "Cabinet Photographs," which he is taking to perfection. 15v14tf

**Brown's Filtering Heater.**—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One in operation at the San Francisco Foundry, Fremont street, where rights can be procured, or all needed information, on application, in person or by letter, to 5v14-ly AUSTIN A. WELLS, Agent.

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEERS, corner of Pine and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with *rubic* teeth—thus restoring them to their original usefulness and beauty. 5v14-ly Call and examine the work. Finest quality of artificial work also manufactured. 15v14 tf

Persons desirous of obtaining the finest Wood Engravings, can procure them only by having the picture photographed on the block, by D. H. WOODS, No. 28 Third street. 15v14tf

**Allen's Lung Balsam.** Remarkable cure of the daughter of Robert Lawrence, Esq.: NEWPORT, Ky., June 1, 1863.—Gentle—I will give you a statement of the wonderful medicinal properties of ALLEN'S LUNG BALSAM. My daughter was attacked with a cold, which settled on her lungs. A severe cough was the consequence, which so harassed her that she became much reduced. She had great pains in her side and breast, attended with cold chills and night sweats. She raised more than a pint of matter a day. Finally her lungs became ulcerated; her hands and feet were cold and clammy as death. Her physician, having failed to give any permanent relief, said that he could not do anything more for her; that she must soon die. At this time I procured Allen's Lung Balsam, which caused her to raise large quantities of matter and phlegm. When this was expectorated, her appetite and strength gained rapidly, and her cough in a short time ceased; and now she is a most extraordinary trophy of the medicinal properties of Allen's Lung Balsam. Respectfully yours, ROBERT LAWRENCE. Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle. Sold by all Medicine dealers everywhere. 15v14-1m

## The People's Friend—Perry Davis' Vegetable Pain Killer.

The greatest Family Medicine of the age! Taken internally, it cures sudden Colds, Coughs, etc., Weak Stomach, General Debility, Nursery Sore Mouth, Canker, Liver Complaint, Dyspepsia or Indigestion, Cramp and Pain in the Stomach, Bowel Complaint, Painters' Colic, Asiatic Cholera, Diarrhoea and Dysentery. Applied externally, it cures felons, boils and old sores, severe burns and scalds, cuts, bruises and sprains, swelled joints, ringworm and tetter, broken breasts, frosted feet and chilblains, toothache, pain in the face, neuralgia and rheumatism. It is a sure remedy for ague and chills and fever. 25- Sold by all Medicine Dealers everywhere. 20v14-3

## NORTH AMERICA Life Insurance Company.

### Usual Restrictions on Occupation and Travel ABOLISHED!

Policies of this Company are guaranteed by the State of New York, which is true of no other Company on this Coast.

The most Responsible and Liberal Company in the World!

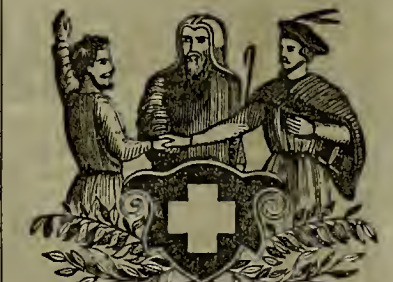
**J. A. EATON & CO.,** Managers Pacific Branch, 302 Montgomery st. 20v14mnp SAN FRANCISCO.

**Builders' Insurance Company—** OFFICE IN THE BUILDING OF THE CALIFORNIA SAVINGS BANK, California street, one door from Sansome street. FIRE AND MARINE INSURANCE. 15v14mnp

**ISAAC LOBREE & CO.,** GOLDEN STATE POTTERY, ANTIOCH, CAL. Office in San Francisco, 516 Commercial st. Constantly on hand a large assortment of Earthenware, Fire Bricks, Fire Clay, and Stoneware. Is prepared to fulfill all orders at the shortest notice. 20v14tf

## Dr. Hufeland's Swiss Stomach Bitters.

THE WORLD RENOWNED REPUTATION, TOGETHER with the extensive and increasing demand for Dr. Hufeland's Swiss Stomach Bitters, will at once recommend them to the favorable notice of all connoisseurs and lovers of a good and healthful tonic and invigorator. As a purifier of the blood, acting surely, yet gently, on the secretions of liver and kidneys, they are unsurpassed and a most agreeable drink.



For sale at all wholesale and retail stores on the Pacific Coast, at the depot of TAYLOR & BENDEL, 413 and 415 Clay street, between Sansome and Battery, San Francisco. 20v14-6m

## LINSEED OIL. The Pacific Linseed Oil & Lead Works

Are now prepared to furnish dealers and consumers Pure Linseed Oil, Raw or Boiled, at the Lowest Market Rates. We call especial attention to the quality of our Oil, believing it to be superior to any imported Oil offered in this market. Orders from the country will have prompt attention. Address, Pacific Linseed Oil and Lead Works, Care of L. B. BENCHLEY & CO., San Francisco. 19v14-3mnp

## PACIFIC Rolling Mill and Forge Co., SAN FRANCISCO, CAL.

Established for the Manufacture of RAILROAD AND OTHER IRON —AND— Every Variety of Shafting, Embracing ALL SIZES of Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames. —ALSO— HAMMERED IRON Of every description and size. Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention. The highest price paid for Scrap Iron. 9v143mnp

## A. S. Hallidie & Co., MANUFACTURERS OF FLAT & ROUND WIRE ROPE, For Mining, Shipping, Ferry, and GENERAL PURPOSES.

Office—412 Clay street, San Francisco. Works—North Beach. NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hemp Rope; is spliced and repaired in the same manner. The attention of Mining Companies is particularly called to our Flat and Round Mining Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life. Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope. We manufacture of all sizes, and in any length—Round Wire Rope—Iron or Steel, for Hoisting. Flat Wire Rope—Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

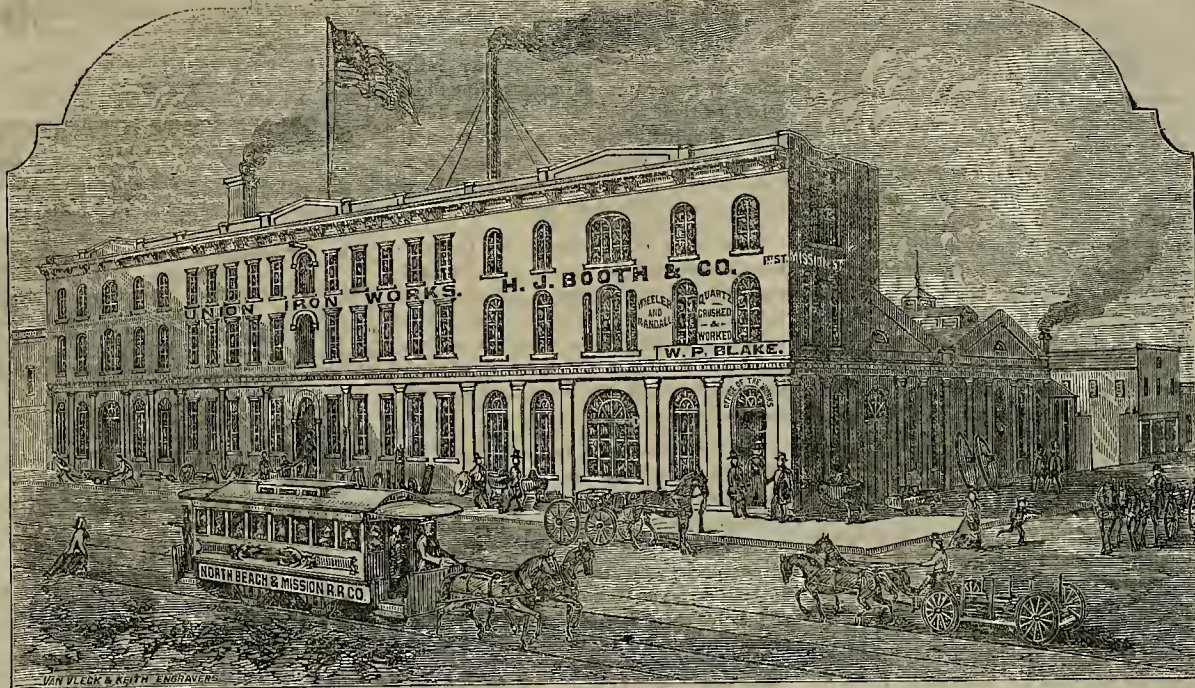
Galvanized or Ungalvanized Round Wire Rope—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes. Steel Ferry Ropes—For wide streams. Ferry Blocks supplied. Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{1}{4}$  inch diameter, for hanging window sashes; Signal Cord; Sash Pulleys on hand. Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.		Steel Wire Rope.		Hemp Rope.		Chain.		Equivalent Strength.	
Circ. in.	Wt. pr 100 ft.	Circ. in.	Wt. pr 100 ft.	Circ. in.	Wt. pr 100 ft.	Size Link.	Wt. pr 100 ft.	Brk'g Str'n.	Wt. pr Load.
2	lbs. 53	1½	lbs. 33	5	lbs. 100	¼	266	tons 7	lbs. 2,300
2	83	2	55	6	130	⅜	341	11	3,700
3½	170	2½	91	8	236	1	533	19	6,300

Pumpkins containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6mnp

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Cas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coining Machinery, Pila Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**ROLLERS.**—Locomotive, Flat, Tubular, Upright, Cylinder and Cornish, and every variety of Roller Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenos Wheeler's Improved Flat Bottom pan, Venter's tubs, Frater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chilo Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

**Russia Iron Screens**, of all degrees of fineness and of all qualities of Iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH, GEO. W. PRESCOTT, IRVING M. SCOTT

24v12

H. J. BOOTH &amp; CO.

### Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**

Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
**STEAM ENGINES AND QUARTZ MILLS,**  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing,**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
HEPBURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CLEST,  
Superior for working either Gold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 15v10qy-d

**WILLAMETTE IRON WORKS,**  
PORTLAND, OREGON.

**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
Sacramento.

**WILLIAMS, ROOT & NEILSON,**

MANUFACTURERS OF  
**CROSS' PATENT BOILER FEEDER,**  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.  
Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

**Dunbar's Patent Self-Adjusting Steam Piston Packing,** for new and old cylinders, manufactured to order.

Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

J. MARSHALL, **GLASGOW** W. WYLIE

**IRON & METAL IMPORTING COMPANY,**

Nos. 25 and 27 Fremont street, near Market,  
SAN FRANCISCO.

Bar and Sheet Iron, Boiler Plates and Tubes; Gas and Water Pipes, Gas Fittings, Anvils, Cast Steel, etc. 18v12-2m

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,  
—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24 qy-3

**SAN FRANCISCO**  
**Foundry and Machine Works.**

N. E. Cor. Fremont and Mission streets,  
Manufacturers of  
**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—  
**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston-Packing,** requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-ly **DEVOL, DINSMORE & CO**

**GLOBE**

**Foundry and Machine Shop,**  
STOCKTON, CAL.

**KEEP, BLAKE & CO.,**

MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers,**

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited and promptly executed.  
13v13-ly

LEWIS COFFEY.

J. S. WISDON

**LEWIS COFFEY & RISDON,**  
**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY,**  
No. 125 First street, opposite Minna,  
SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Cones of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE. J. H. WEED.  
V. KINGWELL 18v13-ly

J. O. HANSCOM } **HANSCOM & CO.,** { T. PENDERGAST.  
H. S. SMITH. W. W. HANSCOM.

**Etna Iron Works!**

Southeast corner Fremont and Tehama streets,  
SAN FRANCISCO.

**Practical Machinists and Iron Founders,**  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,  
Dunbar's Improved Self-Adjusting  
PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight, without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grinder and Amalgamator,**

Which only needs examination to be appreciated.  
**Tyler's Improved Water Wheel,**  
Giving greater power at lower cost, than any wheel in use. Sent for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast White Iron Stamp Shoes and Dies."**  
None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.  
19v12

**FULTON**

**Foundry and Iron Works.**

**HINCKLEY & CO.,**

MANUFACTURERS OF

**STEAM ENGINES,**

**Quartz, Flour and Saw Mills,**  
**Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.**

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-qy

**NEPTUNE IRON WORKS,**

Corner of Mission and Fremont Streets,  
SAN FRANCISCO.

**MARINE,**

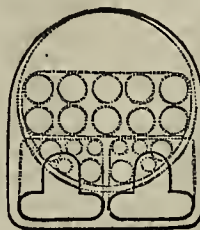
**Locomotive,**  
And all kinds of  
**HIGH PRESSURE**  
**Steam Boilers**

MADE

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.

**Old Boilers Repaired**  
**D. CAMERON.**



6v12-ly

**MINE EXPLOSION.**—The Downieville Messenger chronicles a recent explosion in the Combination Co's tunnel, at Wet Ravine, as follows: The men who were driving the main tunnel struck into an old drift which had been run by another company, about ten years ago, and after opening into it, one of them went in and on raising his candle near the top, an explosion instantly followed, similar to setting off powder in the open air, and the whole tunnel was in a flame of fire. The man immediately jumped down into the main tunnel and barely escaped being burned, although considerably warmed up. Fortunately, the main tunnel was about five feet lower, and the fire confined itself to the old tunnel. There were several men at work on either side of the main tunnel, and near the place, and had it been above the fire, instead of below, they must have all perished.

The flame appeared to be very much like that produced by the burning of alcohol. It continued burning for about half an hour, and then went out. But in a short time, it was cautiously fired again by placing a candle on the end of a stick, when a like explosion took place and the flames increased. The third time it was fired, the report was still louder and the fire stronger, when it was determined to beat a retreat from such a dangerous locality.

**EXTENSIVE FILTERING.**—Telford Macibell, says the London Lancel, has a project for filtering the Thames water by conducting it to the Bayshot sands, and spreading it over them. By means of canals it is then to be gathered again, and afterwards distributed by the various water companies throughout London. Two hundred millions of gallons daily is required. The area of the filter is twenty-two and a half square miles.

**A LAND OFFICE BUSINESS.**—Thirty-eight thousand acres of public lands were disposed of in March at the following Land Offices in California: 26,500 at San Francisco; 2,500 at Stockton, and 9,000 at Marysville.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**

P. CLERC, D. KINCLAUS, W. DEBRIK.

**CLERC & CO.,**

Iron Founders, Steam Engine Builders, and Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.  
9v146m

J. NEWSHAM, J. BIGWOOD.  
**SOUTH BEACH IRON WORKS,**

Near corner of King and Third streets, San Francisco.  
**MARINE ENGINES,**  
AND ALL KINDS OF

**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufacturer to order. Jobbing of every description promptly attended to. All work done guaranteed. 13v14-ly

**JOHN LOCHHEAD'S**  
**Steam Engine Works,**

Scale street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,

**DONKEY PUMPS, Etc., Etc., Etc.**

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.

Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**RAPID PROGRESS.**—The Summit tunnel on the Central Pacific Railroad, is to be 1,660 feet long. It was commenced last September, says the *Bee*, at four points—the two ends and two faces, which were created by a shaft in the center. It has been worked night and day; and on May 1st but 681 feet remained to complete it, although it was expected that three or four years would be consumed in the work. At this rate it will be finished by the first of August.

**WORTH A TRIAL.**—A correspondent of the *Country Gentleman* asserts that red cedar twigs bound around the bodies of fruit trees, butts upwards, will effectually protect them from insects. Col. Dewey of Hartford, writes to the *Horticulturist* that in his vineyard, grapes trained upon red cedar posts and trellises are free from mildew and insects, and those growing closest to the posts have the most healthful appearance and are the most productive.

**B. F. HOWLAND,**  
PHOTOGRAPHER,  
Nos. 25 and 27 Third street, east side, near Market street,  
San Francisco.

Enamelled Cards, Ambrotypes and Sun Pearls, executed in a superior manner. Small pictures engraved and enlarged to any size, at one-half the price usually paid for such work. Cards de Visites only \$2.50 per dozen; Vignettes at \$1.00 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and receive specimens. 514-6m

**JOHN TAYLOR & CO.**  
IMPORTERS,  
AND DEALERS IN  
**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LAOD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A full assortment of ORUGISTS' GLASSWARE and ORUGISTS' Sundries, AGIOS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
**E. D. WATERS & CO., Prop'rs.**  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.

Terms, \$9 per Year, payable in advance.

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For enclosure in letters, is also published every  
STEAMER DAY.  
13v13-1f

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House free of charge, and to any part of the city for 50 cents 21v12

**STOCK CERTIFICATES,**  
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And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Brynn Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

**GODDARD & COMPANY.**

**A. S. CHERCH. S. B. CLARK.**  
**CHURCH & CLARK,**  
IMPORTERS AND DEALERS IN  
Mediterranean and California  
FRUITS, NUTS, CONFECTIONERY, Etc.,  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 407 Front st., San Francisco.  
Printed list of kinds and prices furnished. 13v14-6m12p

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**C. E. COLLINS,**  
No. 603 Montgomery Street, San Francisco.  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry 25v10-6m  
**WATCH REPAIRING AT NEW YORK PRICES.**  
**NEW YORK PRICES.**

**THE WILCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly  
Gouge and so on, or send for Report of the trial.  
**SAMUEL SWIFT, Agent,**  
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**LUCY & HYMES,**  
MANUFACTURERS OF  
**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**  
Factory—Beale st., bet Mission & Howard.  
Office, 319 California street, San Francisco. 17v14-1f

**To Capitalists.**  
**GOLD QUARTZ MINE, SITUATED IN CALAVERAS**  
County, with steam mill fitted up with Amalgamating  
Pans, etc., FOR SALE. The mine has three main veins, and  
more than \$80,000 have been spent in opening them and com-  
pleting the mill. Good wagon roads all the way. Apply to  
BELLOC FRERES, Bankers,  
535 Clay street, San Francisco. 23v13-6m

**RADICAL CURE**  
—OF—  
**RUPTURE!**

Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 624 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

**DR. A. FOLLEAU**  
Has his studies and manufactures in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
He has no connection with any Agency. 8v13-1y11p

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
On Saturday, February 9, 1867,  
An Entirely New Style of  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most dresy Hat ever introduced on the  
Pacific Coast.  
Call and see them. 8v14

**ITALIAN MANUFACTORY**  
FIRST PREMIUM 1857 1858 1864 1865  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 Sansome St. 706)  
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**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

### Copartnership Notice.

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m

### Machinists and Foundries.

#### Miners' Foundry

—AND—  
**MACHINE WORKS,**  
Nos. 245 to 255 FIRST STREET,  
San Francisco.  
**HOWLAND, ANGELL & KING,**  
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Manufacturers of Machinery for  
QUARTZ MILLS, FLOUR MILLS,  
SAW MILLS, SUGAR MILLS,  
POWDER MILLS, PAPER MILLS,

Steam Engines of all Kinds.  
Amalgamators of all Kinds.  
MINING PUMPS, HOISTING WORKS,  
OIL WELL TOOLS, ROCK BREAKERS,

—AND—  
Machinery and Castings of all kinds, either  
of Iron or Brass.  
Boilers and Sheet Iron Work in all its  
Branches.

Shoes and Dies of White Iron, manufactured  
for and imported by us expressly for this pur-  
pose, and will last 25 per cent. longer than any  
other made on this coast.

Russia Iron Screens, of any degree of fineness.  
We are the only manufacturers on this coast of  
the "Hicks Engine," the most compact, simple  
in construction, and durable of any Engine in  
use.

W. H. HOWLAND, E. T. KING,  
H. B. ANGELL, CYRUS PALMER.  
13v14-qr

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#### MACHINE SHOP.

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Contractor for all kinds of

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For the Patent Office at the City of Washington. Tool  
Maker for all branches of mechanics. Repairing done at  
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14v14-ly



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manner. Particular attention paid to Steamboat, Sugar  
House and Distillery work.  
Repairing promptly and neatly attended to.  
13v11

#### Pacific File, Reaper and Mower Section

**MANUFACTORY,**  
No. 53 Beale Street, between Market and Mission,  
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Files Recut and warranted as good as new, or no charge.  
The only establishment in the State. We also man-  
ufacture Reaper and Mower Sections.  
12v14-3m OURNING & FISHER, Prop'rs.

#### Hazard's Powder.

#### BLASTING AND SPORTING

#### GUNPOWDER,

SUPERIOR QUALITY.  
Also, SAFETY FUSE OF ALL KINDS.  
**EDWARD H. PARKER,**  
Agent for the Hazard Powder Company, 224 California  
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#### Attention! Attention! Attention!

#### Look to Your Health in Time!

**HEALY'S CURATIVE OIL, FOR THE SURE AND**  
speedy extermination of Pain, having no equal in  
the world, is now being universally sought after by all  
classes throughout the Pacific Coast. The Miner, the Me-  
chanic, the Artisan, the Laborer, the Farmer, and the Mor-  
chant, pronounce it the Greatest Remedy of the age.  
Are you afflicted with Rheumatism?

Use Healy's Curative Oil!

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Have you a Sore Throat? Use Healy's Curative Oil!

Have you the Toothache? Use Healy's Curative Oil!

Are you subject to Cramps? Use Healy's Curative Oil!

And for the cure of Cuts, Burns, Sprains, and the bites of  
poisonous insects, it has no equal in the world. A sure and  
permanent cure guaranteed in every case. Full directions  
on every bottle. None genuine unless the face simile sig-  
nature of FRANK HEALY is on the outside wrapper of the  
bottle.

Wholesale Agents—Crane & Brigham, and R. H. McDon-  
ald & Co., San Francisco; and at retail by all respectable  
Drugists and Grocers. Price, \$1. 21v14-10p

#### GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.  
THE STREET CARS PASS THIS HOUSE IN  
every direction, every ten minutes.  
The rooms of the House are well furnished, large  
and airy, are let by the month, week or day, and are  
kept in superb order. There is a Restaurant attached for  
ladies and families, where persons can board for one-half  
they are required to pay at hotels. 17v13-4m SANBORN & CO



## Golden City Chemical Works.

LABORATORY,  
Corner of Seventh and Townsend Streets.  
OFFICE,  
Corner of Montgomery and Bush Streets.

CAPITAL STOCK, - - - \$500,000

Trusted:  
H. P. WAKELEE, THOS. H. SELBY,  
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CHAS. E. McLANE.

H. P. WAKELEE, MANAGER.

THIS COMPANY ARE NOW PREPARED TO FURNISH Sulphuric, Nitric and Muriatic Acids of superior quality, in quantities to suit.

Orders will be received at the office only for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed.

## BLAKE'S PATENT QUARTZ CRUSHER.

## CAUTION!

The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1865.

This Patent secures the exclusive right to employ in Stone-Breaking Machines Up-right Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials are crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.

BLAKE &amp; TYLER, Agents for the Pacific Coast.

## WE ARE NOW OFFERING OUR IMMENSE STOCK

## Fine Custom Made Clothing

## Gents' Furnishing Goods

## AT PRICES THAT DEFTY COMPETITION.

## Our Stock of Clothing Consists of

## ALL THE LATEST STYLES

## BOTH OF MATERIAL AND FINISH.

## A Large Assortment of

## Trunks, Valises, Carpet Bags, Blankets, Etc.,

## AT EXTREMELY LOW PRICES.

## J. R. MEAD &amp; CO.,

## Cor. of Washington and Sansome streets.

## Overland Route.

## THE PENINSULAR AND ORIENTAL

## STEAM NAVIGATION COMPANY'S

## STEAMSHIPS

## Leave Hongkong Twice a Month,

## On the 1st and 15th in the Northeast Monsoon,

## and about the 11th and 20th in the

## Southwest Monsoon.)

## —FOR—

## SOUTHAMPTON AND MARSEILLES,

## VIA. EGYPT,

## Calling at Singapore, Penang,

## Point de Galle, Aden, Suez, Alex-

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## From Point de Galle their steamers run to Madras,

## Calcutta, and Bombay, twice a month, and once a month

## to King George's Sound, Melbourne and Sydney.

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## From Hongkong their steamers run constantly to

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## HONGKONG, 1867.

## —

## Persons wishing Mechanical Drawings can obtain

## the services of competent draughtsmen, by applying to this

## office.

## HONGKONG, 1867.

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BARTLING & KIMBALL,  
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MARBLE WORKS,  
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Mantels, Monuments, Tombs, Plasters' Slabs  
Etc., on hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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HUCKS & LAMBERT,  
SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L. AXLE GREASE,  
Natomia Street and North Beach,  
2v13-3m SAN FRANCISCO.

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Established 1849.  
C. NUTTING,  
Manufacturer of  
Fire-Proof Doors and Shutters,  
BANK VAULTS, PRISON CELLS, BALCONIES, AWW-  
INGS, GRATINGS, IRON FENCE, STAIRS, Etc.,  
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LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by  
M. M. COOK & SON,  
No. 801 Battery street,  
13v13-3m SAN FRANCISCO.

SAN FRANCISCO  
Cordage Manufactory!  
CONSTANTLY ON HAND A LARGE ASSORTMENT  
—OF—  
MANILA CORDAGE,  
Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.

Office, at TUBBS &amp; CO'S, 611 and 613 Front street.

Manufacture at the Pottery, 11v14-1q

ANDRADE &amp; PATTERSON,

MANUFACTURERS AND ENGRAVERS

—OF—

METALLIC SIGNS,

AND SIGN PAINTERS,

Corner of Montgomery and Pine Streets,  
SAN FRANCISCO.

J. M. STOCKMAN,

Manufacturer of  
PATTERNS AND MODELS,  
(Over W. T. Garratt's Brass Foundry.)  
S. E. Corner of Mission and Fremont sts.,  
6v14-1f SAN FRANCISCO

—USE—

EMERY &amp; EATON'S

GREEN SEAL SMOKING TOBACCO.  
16v14-5m No. 513 Battery street.

TO VICTIMS OF RHEUMATISM IN

ALL ITS FORMS.

BE IT KNOWN TO ALL WHO ARE AFFLICTED WITH

this terrible and excruciating disease, that the means

of a safe, speedy and permanent cure are within the reach

of every sufferer, by using

RICHARDS' REMEDY!

For Inflammatory, Chronic, Hereditary and Mercurial

Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and

the modifications of the disease, whether confined to one

portion of system or erratic in their character. Composed

wholly of VEGETABLE EXTRACTS, it exterminates the

tormenting humors, restores strength, returns health and

hope to the pain-worn and debilitated patient, and

cures, nothing but the grossest imprudence can lead

to a relapse. The confidence with which these statements

are made to the public, is the result of many years' ob-

servation and experience. The reputation of mere pal-

latives soon dies out, but that of a STEERING MEDICINE,

which produces, year after year, in all cases, the same ben-

eficial effects, NEVER DIES. This has been the history of

Richards' Remedy. Try it!

RICHARDS' REMEDY is for sale by

H. BOWMAN, Druggist, Sacramento.

And by Druggists generally.

Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain

the services of competent draughtsmen, by applying to this

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HONGKONG, 1867.

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the services of competent draughtsmen, by applying to this

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ENLARGEMENT  
OF THE  
American Journal of Mining

Volume III, commencing March 3.

In consequence of the remarkable success that has at-  
tended this Journal, the proprietors feel warranted in in-  
creasing its size to

Twenty Pages.

Thus making it the LARGEST and most COMPREHENSIVE  
Mining Journal on this continent, representing the Gold,  
Silver, Copper, Iron, Lead, Coal, Salt, Oil, and in fact all  
the Mineral interests of America, containing beautiful en-  
gravings, illustrating the latest improvements in mining,  
mining and metallurgical machinery.

The Journal has won the encomiums of the press of the  
entire country and Europe, and numbers among its con-  
tributors more eminent scientific men than any other  
weekly publication in America.

The reports of the markets in stocks, metals, minerals  
and ores, carefully corrected weekly are an important fea-  
ture of the Journal.

Subscription \$4 per year; for six months, \$2.25—in ad-  
vance; single copies, 10 cents. Specimen copies sent free.  
Address, WESTERN COMPANY,  
17v14-4t Publishers, 37 Park Row, N. Y.

TIE CELEBRATED

Self Generating Portable

Gas Lamp.

This extraordinary Lamp produces its own gas by the vapor-

ization of Petroleum, Naphtha,

or Benzine. It emits neither

smoke nor smell, and burns with

a pure white flame, equal in in-

tensity to an ordinary gas burn-

er, and at an expense of from one

to three cents per hour only, ac-

cording to the quantity of light

required. It is peculiarly adapted

for mining purposes, also for

stores, factories, billiard rooms,

and, in fact, for all purposes

where regular gas is not availa-

ble, and for which it is an ad-

mirable substitute. As an out-

door light, it stands unrivalled,

burning with undiminished bri-

lliance in a strong wind.

Directions for Use.

Charge the reservoir with the prepared fluid, or with

Benzine, from half to three-fourths full; allow a portion to

run through into the cup, then turn off the tap and ignite

the fluid, which will heat the burner sufficiently to gener-

ate the gas, which will be seen issuing from the top. The

tap must now be turned on, and a steady light will be main-

tained till the whole of the contents of the reservoir is con-

sumed.

A small needle, bent at the point and fixed in a holder,

may be occasionally required to clear the minute hole

through which the gas issues, and the regulating screw at

the bottom turned a little back; but care must be taken not

to force the screw too high, and it should never be used to

extinguish the light—by turning the tap off, it will gradually

go out.

When necessary to renew the cotton which is placed in

the lower pipe to prevent the too rapid flow of the fluid, the

lamp should be placed in a vise and the burner screwed off

the burnt cotton must then be withdrawn, and a fresh

piece of stout cotton rag, one inch wide and four or five

inches long, should be doubled over a piece of wire, and

inserted into the pipe—the ends cut short off, the burner

again screwed on with a little white lead, and the lamp is

ready for use.

Manufactured solely by JOHN J. HUCKS, original prop-

rietor. Factory, North Beach, San Francisco; and for sale

by his agents in every city and town throughout the State.

18v14-3m

## New Mining Advertisements.

Batopilas Mining Company, Batopilas Dis-

trict, State of Chihuahua, Mexico.

Notice.—There are delinquent, upon the following de-

scribed stock, on account of assessment (No. 3) levied on the

eleventh day of April, 1867, the several amounts set

opposite the names of the respective shareholders, as follows:

Names. No. Certificate. No. Shares. Amount.

Samuel M. Farran.....1 20 \$40 00

Samuel M. Farran.....2 20 40 00

Samuel M. Farran.....3 10 20 00

J. R. Mitchell.....4 10 20 00

J. R. Mitchell.....5 15 30 00

Mrs Emma E. Van Brunt.....6 50 100 00

Wm E. Donnell.....7 13 26 00

Wm Gildemeister.....8 38 76 00

Wm Gildemeister.....9 32 64 00

Win J. Springer.....10 19 38 00

James P. Dyer.....11 13 26 00

Joseph D. Enas.....12 25 50 00

A. C. Walt.....13 40 80 00

R. R. Stoddard.....14 8 16 00

Chas F. Brown.....15 25 50 00

Edward H. Parker.....16 28 56 00

James F. Hough.....17 25 50 00

Charles F. Schulze.....18 44 88 00

Telford MacCann.....19 21 42 00

Edward MacCann.....20 21 42 00

William MacCann.....21 42 84 00

Charles Pace.....22 13 26 00

D. D. Shattuck.....23 13 26 00

Robert Cove.....24 6 12 00

Arthur M. Ebbets.....25 57 114 00

Charles Dunsenber.....26 76 152 00

Phillip Donohue.....27 31 62 00

B. F. Lowe.....28 215 430 00

A. C. Hendley.....29 70 140 00

A. C. Hendley.....30 126 252 00

A. C. Hendley.....31 13 26 00

Charles J. Farran.....32 15 30 00

M. J. Irenbush.....33 50 100 00

Mrs Carrie M. P. Coleman.....34 95 190 00

Mrs Carrie M. P. Coleman.....35 63 126 00

Henry Bursconch.....36 25 50 00

Henry Bursconch.....37 10 20 00

George Platt.....38 32 64 00

Edward C. Lovell.....39 6 12 00

L. W. Williams.....40 12 24 00

John H. Sievers.....41 19 38 00

Charles Baum.....42 25 50 00

George A. Parker.....43 51 102 00

Thomas A. Hughes.....44 25 50 00

J. E. Jorgensen.....45 13 26 00

George B. Bailey.....46 63 126 00

Charles R. Boutwell.....47 8 16 00

Margaret Madigan.....48 5 10 00

William Lull.....49 24 48 00

And in accordance with law, and an order of the Board

of Trustees, made on the eleventh day of April, 1867, so

many shares of each parcel of said stock as may be ne-

cessary, will be sold at public auction, by Messrs. Maurice

Dore &amp; Co., No. 327 Montgomery street, San Francisco, Cal.,

on Monday, the third day of June, 1867, at the hour of 2

o'clock, P. M. of said day, to pay said delinquent assess-

ment thereon, together with costs of advertising and ex-

penses of sale.

A. MARTINON, Secretary.

Office, 311 Montgomery street, up stairs, San Francisco,

Cal. my18

Lyon Mill and Mining Company, Kelsey Dis-

trict, El Dorado County, California.

Notice.—The Annual Meeting of the stockholders of the  
above Company, for the purpose of electing Trustees, and  
transacting other necessary business, will be held at the  
office of the Company, No. 6 Government House, San Fran-  
cisco, on the SIXTH DAY OF JUNE, 1867, at 3 o'clock P.  
M. of that day.

J. M. BUFFINGTON, Secretary.

San Francisco, May 14, 1867. my18

Nuestra Señora de Guadalupe Silver Mining

Company, Tayoltita, San Dimas District, Durango, Mexico.

The public is herewith cautioned against buying or nego-

tiating the following described Certificates of Stock in said



## Mining Notices—Continued.

## Big Blue Lead Gold and Silver Mining Company, Cove District, Kern County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the nineteenth day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Bailey, J. H.	137	5	\$25.00
Calvert, William	151	5	25.00
Calvert, William	153	5	25.00
Crandle, O. L.	188	40	200.00
Crandle, O. L.	194	10	50.00
Dannell, Wm. M.	127	3	15.00
Dannell, Wm. M.	141	1	5.00
Dannell, Wm. M.	161	2	10.00
Dannell, Wm. M.	167	1	5.00
Dannell, Wm. M.	171	1	5.00
Dannell, Wm. M.	175	15	75.00
Fiedler, F.	90	20	100.00
Gatell, B.	135	5	25.00
Hartell, H.	138	5	25.00
Haraszy, A.	131	74	365.00
Haraszy, Mrs. E.	119	10	50.00
Hart, Caleb	129	10	50.00
Hart, Caleb	131	15	75.00
Hart, Caleb	183	7	35.00
Hyatt, Caleb	207	13	65.00
Leisewitz, H.	61	10	50.00
Leisewitz, H.	63	10	50.00
Leisewitz, H.	67	20	100.00
Leisewitz, H.	64	30	150.00
Leisewitz, H.	153	15	75.00
Loomis, W. E.	163	15	75.00
Moller, A. P.	54	31	155.00
Moller, A. P.	50	30	150.00
Moller, George, in trust for	91	20	100.00
P. Moller	118	1	5.00
Nave, L. W.	184	2	10.00
Newman, S.	157	2	10.00
Newman, S.	157	2	10.00
Nelson, Peter	178	3	15.00
Park, H. J.	204	60	300.00
Patterson, Chas. A.	162	10	50.00
Patterson, Niel	181	5	25.00
Patten, Farnelia G.	205	4	20.00
Reynolds, H. C.	130	10	50.00
Smith, R. H.	189	10	50.00
Tischer, L.	200	10	50.00
Uman, M.	164	28	140.00
Vallant, J.	204	18	90.00
Vallant, J.	207	18	90.00
Vest, C. H.	126	15	75.00
Woodhams, Oscar	17	20	100.00
Woodhams, Oscar	18	20	100.00
Woodhams, Oscar	21	20	100.00
Woodhams, Oscar	22	20	100.00
Woodhams, Oscar	21	15	75.00
Woodhams, Oscar	21	5	25.00
Woodhams, Oscar	95	5	25.00
Woodhams, Oscar	133	5	25.00
Woodhams, Oscar	135	5	25.00
Woodhams, Oscar	135	5	25.00
Woodhams, Joseph	165	20	100.00
Woodhams, Alfred R.	166	10	50.00
Woodhams, Lucy A.	169	125	625.00
Woodhams, Mary E.	170	25	125.00
Wolf, A.	114	10	50.00
Wilke, P. C.	210	10	50.00
Wing, Richard	179	10	50.00
Woodward, W. A.	100	35	175.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 315 Montgomery street, San Francisco, Cal., on the twenty-third day of April, 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

M. O. ELMORE, Secretary.

Office, 315 Montgomery street, San Francisco. ap1

POSTPONEMENT.—The above sale is hereby postponed until Wednesday, the twenty-second day of May, 1887, at the same hour and place. By order of the Board of Trustees.

M. O. ELMORE, Secretary.

## Chilpaneca Mining Company—District of Ures, Sonora, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-eighth day of March, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Lohse, J. F.	57	30	\$150.00
Moshelmer, Jos.	57	25	125.00
Moshelmer, Jos.	57	25	125.00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-eighth day of March, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of J. Middleton & Son, No. 494 Montgomery street, San Francisco, California, on the twentieth day of May 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN P. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. m4

## Chalk Mountain Blue Gravel Company.—Location of Works: Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1887, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth (17th) day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. RUFFINGTON, Secretary.

Office, No. 5 Government House, corner Washington and Sansome streets, San Francisco, California. may4

## Cinco Senores Gold and Silver Mining Company, Copala, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1887, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 523 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD O. LOVELL, Secretary.

Office, No. 523 Clay street, San Francisco. mi

## PATENT BUSINESS.

We have lately associated with us in the Patent and Mechanical Department of the Mining and Scientific Press, a gentleman of superior ability and attainments, who has arrived direct from the leading patent agency in New York City, and having a faithful and reliable associate in Washington City, we are now better prepared to receive and secure the claims of our applicants, in a careful, prompt and efficient manner.

DEWEY & CO., Patent Solicitors.

## Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Camp, Jas.	74	5	\$100.00
Crunkhouse, J. A.	5	5	60.00
Dirnkupfel, L.	7	5	60.00
Harker, W. B. C.	21	10	200.00
Harker, W. B. C.	24	10	200.00
Harker, W. B. C.	134	3	60.00
Jacobs, S. B.	135	1	20.00
Fransell, J. C.	132	1	20.00
Gray, Asaph	131	3	60.00
Lander, H. C.	69	5	60.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1887, at the hour of two o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. mar30

## Dianna Gold and Silver Mining Company.—Location of Works: Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-second day of March, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names	No. Certificate	No. Shares	Amount
H. H. Allen	276	3	\$15.00
Walter Ames	328	5	25.00
E. T. Andrews	299	10	50.00
Henry C. Angell	360	10	50.00
C. B. Bateman	711	4	20.00
R. C. Bidleman	333	3	15.00
Chas. A. Baldwin	561	10	50.00
Henry Bluney	562	6	30.00
Geo. Wm. Bond	563	10	50.00
Oliver Brewer	564	10	50.00
J. B. Bidleman	400	30	150.00
Oliver S. Chapman	366	20	100.00
Godswalder Curry	567	10	50.00
Thos. Doby	568	10	50.00
George E. Downes	569	20	100.00
Wm. Endicott, Jr.	570	10	50.00
Wm. E. Forbes	571	10	50.00
John Gardner	572	20	100.00
A. Gilmore	573	20	100.00
A. W. Gilmore	574	20	100.00
E. W. Gilmore, Trustee	575	20	100.00
John Hastings	576	10	50.00
John Hastings	577	5	25.00
John Hastings	578	5	25.00
Mark Healy	579	30	150.00
Alfonso P. Howard	580	10	50.00
Wm. Prudden	581	10	50.00
M. S. Schuler	582	12	60.00
Geo. L. Stearns	583	10	50.00
J. H. Stephenson	584	33	165.00
R. H. Stephenson, Trustee	585	10	50.00
James Sturge	586	5	25.00
Annie F. Sullivan	587	5	25.00
Annie F. Sullivan	588	5	25.00
Wm. S. Tilton	589	5	25.00
H. B. Wheelwright	590	5	25.00
Henry Whitney	591	5	25.00
E. A. Wild, Trustee	592	10	50.00
E. A. Wild, Trustee	593	10	50.00
E. A. Wild, Trustee	594	10	50.00
E. A. Wild, Trustee	595	10	50.00
E. A. Wild, Trustee	596	10	50.00
C. C. Walworth	597	13 1/2	67.50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of March, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Jones & Bendixen, at the office of the Secretary, corner Front and Clay street, San Francisco, on the fourth day of June, 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, northeast corner Front and Clay streets, San Francisco. myll

## De Soto Gold and Silver Mining Company.—Location of Works: Star District, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of April, 1887, an assessment of sixty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 58 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the first day of June, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the nineteenth day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 58 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, California. ap27

## Evoca Consolidated Copper Mining Company.

Location of Works: Court Hill District, near Black's Ferry, Del Norte County, California.

Notice is hereby given, that the Annual Meeting of the shareholders of the above named Company, for the election of Trustees, will be held on THURSDAY, the twenty-third day of May, 1887, at 3 o'clock P. M., at No. 532 Merchant street, Room No. 3, San Francisco, California. By order of the President.

R. S. CLYDE, Secretary.

## George Washington Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of April, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names	No. Certificate	No. Shares	Amount
Altendorfer, Geo.	152	3	\$15.00
Altendorfer, Geo.	163	1	5.00
Allen, John H.	343	3	15.00
Boggs, Geo. W.	347	3	15.00
Blair, Jos. F.	307	5	25.00
Brayton, J. O.	102	10	50.00
Brewer, M. J.	321	5	25.00
Bibber, Henry	327, 328 5-c	10	50.00
Bulls, John	387	10	50.00
Cook, A. J.	93	10	50.00
Cone, J. B.	362	10	50.00
Claidwood, M.	163	10	50.00
Chopson, Mrs. M.	217	1	5.00
Chopson, Mrs. M.	298	2	10.00
Con, M. R.	325	2	10.00
Coon, M. R.	326	15	75.00
Carmichael, A.	338	10	50.00
Carmichael, A.	338	5	25.00
DeGraff, Wm.	142, 143, 144, 216 10-c	60	300.00
Elde, Nelson	405	5	25.00
Genzauer, Jacob	402, 403 5-c	10	50.00
Gilliam, John	73, 74 10-c	20	100.00
E. J. Hargreaves	257	5	25.00
Harris, D. & Co.	256, 257, 258	25	125.00
Herchel, Mrs. H.	269, 338 5-c	25	125.00
Hustie, Robt.	259	10	50.00
Hughes, James	179	2	10.00
Hughes, James	222	3	15.00

Names	No. Certificate	No. Shares	Amount
Hudson, David	1	5	25.00
Hudson, David	43, 20-c	40	200.00
Hudson, David	109	4	20.00
Hackney, H. W.	368	5	25.00
Hackney, H. W.	363	5	25.00
Hyndman, C. G.	131	2	10.00
Iverson, Iver	161	5	25.00
Johnson, Dennis	163	2	10.00
Johnson, Geo. W.	148	3	15.00
Kalhor, Chas.	84	10	50.00
Mudgett, John	261, 262 5-c	10	50.00
McGee, James	264	5	25.00
Miller, John	182	5	25.00
Miller, J. E.	466	10	50.00
Miller, Levi	221	4	20.00
Montgomery, R. F.	66	8	40.00
Neud, Jas. A.	197	10	50.00
Nielsen, J. A.	377	10	50.00
Nielsen, J. A.	377	13	65.00
Marshall, J. C.	385	5	25.00
Marshberg, J.	389	5	25.00
McDonnell, A. G.	391	5	25.00
Phillips, W. L.	775	10	50.00
Radenauer, W. C.	68, 330 3-c	5	25.00
Roberts, J. R.	719	5	25.00
Risley, J. B.	399	4	20.00
Risley, J. B.	370	5	25.00
Shawmut, John	334	13	65.00
Shawmut, J. M.	397	5	25.00
Shawmut, J. M.	397	5	25.00
Stephens, Andrew	unissued	5	25.00
Tyler, Richard	188	2	10.00
Townsend, T. B.	87	10	50.00
Vick, Jos.	385	10	50.00
Vick, Jos.	393	5	25.00
Vann, Matthew	61	5	25.00
Whitney, J. B.	229	25	125.00
Wyckoff, J. L.	274	10	50.00
Williams, Samuel	260	5	25.00
Williamson, John	300, 318, 319	5-c	25.00
Wilson, D. G.	382	5	25.00
Wilson, D. G.	375	20	100.00
Wheeler, C. H.	unissued	35	175.00
York, E. M.	62	2-c	4.00
York, E. M.	62	4	20.00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of April, 1887, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the third day of June, 1887, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. O. WOOD, Secretary.

Office, 338 Montgomery street, San Francisco. mll

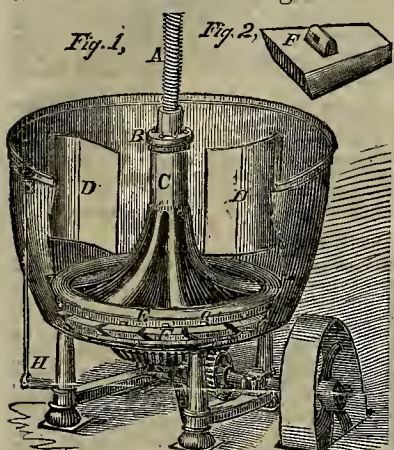
## Hope Gravel Mining Company.—Location of Works and Property: Orass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of April, 1887, an assessment (No. 14) of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Wednesday, the twenty-second day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eleventh day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the muller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the muller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v14tf

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam boilers, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
**PACIFIC FOUNDRY,**  
1v1 San Francisco.

## QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

## First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or  
**J. B. HUTCHCOCK,**  
19v14-3m Millwright, Russ House.

## FOR SALE!



**PATENT RIGHT OF HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable. Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

**E. O. HUNT,**  
28 SECOND STREET,  
11v24 San Francisco

## DUDGEON'S

PATENT

Hydraulic Lifting Jacks

-AND-

BOILER PUNCHES,

16v14 Eighth street, cor. Minna. qf

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

**PICKERING'S GOVERNORS**

For Steam Engines.

**Giffard's Injectors,**

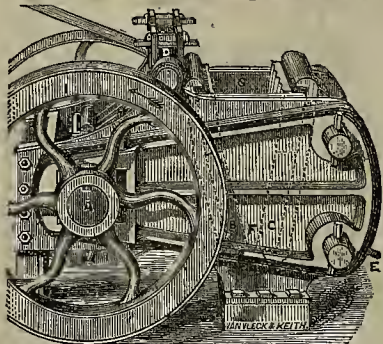
For Feeding Boilers.

**STODDART'S IRON WORKS,**

Beale Street, San Francisco.

23v12 3m

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENT IMPROVED QUARTZ CRUSHER.** The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low rates: No. 1.—10 inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, \$600 No. 2.—Or 15 inch Crusher, capable of similarly putting through five to six tons per hour. 550 No. 3.—Or 18 inch Crusher, will in a similar manner crush from seven to eight tons per hour. 1,200

**EXPLANATION OF THE ABOVE ENGRAVING.** The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient light to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:

RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1866.  
JAMES BRODIE, Esq., San Francisco.—My Dear Sir: I give you pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly crushing quartz for the stamps. Yours truly,  
R. P. JOHNSON,  
Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the advertiser.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st November, 1866, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

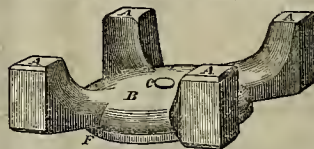
A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1865.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the advertiser.

A drawing and full description of this machine will be found in the Mining and Scientific Press, Sept. 1st, 1866.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street,  
12v13tf San Francisco.

## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber facing, which is secured to the bottom of the Valve by a washer and secured to the entire circumference of the Valve. The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water. Rights for the use or manufacture of this Valve, are for sale by

**V. CUSHING,**  
120 Front street, San Francisco.  
These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.  
See illustration and description of this Pump, published every other week in this paper. 14v14qtf

**Notice to Miners,**  
**Well-Borers and Water Companies.**

**M. PRAO** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

**M. PRAO,**  
8v13-ly Stove Store, No. 125 Clay street, below Davis.

## BLAKE'S QUARTZ BREAKER!

PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

-BY-

**WM. P. BLAKE,**

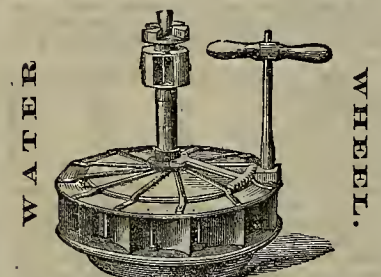
Corner First and Mission streets, or Box 2,077

3v13tf SAN FRANCISCO.

To the Mining Community.

**THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS** constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 551 Harrison street, San Francisco.

**WILLIAM WILLIAMS,**  
Practical Mining Engineer.  
16v14qr

LEFFEL'S  
American Double Turbine

**THESE WHEELS, UNEQUALLED AND UNRIVALED** in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc., etc.

**KNAPP & GRANT,**  
Agents for California.  
26v13-lyq 310 Washington street, San Francisco

HUNTER'S  
Eureka Amalgamator!

**FOR WORKING THE SANDS AS THEY PASS FROM** the battery. The coarse particles of sand are reduced to pass through a No. 6 screen that would pass through a No. 5 in the battery; the fine flour gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The machine is four feet eight inches square on the bottom, and covered with iron dies 1 1/2 inches thick by four inches wide, extending across the bottom with alternate strips of wood on end of the same width. The rubbers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between rubbers. The box is also lined with copper plates. The machine is set in operation by eccentric, giving an oscillating motion; and the rubbers are suspended on iron hangers, and adjusted by set screws. One-fourth of a horse-power is sufficient to run one machine of ten tons capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from WM. WATT, Esq., of the Eureka Mill, will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is from rock that pays \$40 per ton. I am highly pleased with it, and I think it is the best machine after blankets or plates I have ever seen. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it; but the best recommendation I can give it is that I want four more. Will you please go to the Vulcan Foundry and order them." 14v14

On the 1st of April I had an order for two more, for the Pittsburg Company at Nevada City.

The price for a Machine with rubbers made, and dies and wood set in the box, and all the iron work, is \$275. The weight is about one ton with cast iron box; but to save freight, the box can be made of boiler iron, saving 500 pounds weight.

Orders sent to the Vulcan Foundry, the Union Foundry, or the Fulton Foundry, First street, will be promptly attended to.

**ANDREW HUNTER, Patentee.**  
P. S.—Patent allowed.

HUNTER'S  
IMPROVED CONCENTRATOR.

**THE INVENTOR OF THE ABOVE RECENTLY IMPROVED** Machine, is now prepared to take contracts for concentrating gold or silver ores on shares, receiving a certain per cent. of the value of the metal recovered, and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if delivered for shipping, will contain less than one per cent. of sand.

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs. 14v14

## To Quartz Miners and Others.

## NOTICE!

**I WISH TO CALL YOUR ATTENTION TO A PULVERIZER** of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention will be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 14v14-3m

JAMES HITCHENS.

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are cordially invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 G. W. STRONG, Assayer.

## NELSON &amp; DOBLE,

AGENTS FOR

**Thomas Firth & Sons' Cast Steel Files,**

Etc., Shear, Spring, German, Flaw, Blister and Toe Calk

Stail, manila, Rovers

**Mill Picks, Sledges, Hammers, Picks,**

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

319 and 321 Pine Street,

Between Montgomery and Sansome, San Francisco,

10v14qr

## V. CUSHING, Agent

For the Purchase and Shipping of Machinery  
OF ALL KINDS.

**SPECIAL ATTENTION GIVEN TO QUARTZ MILL** Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of all orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14tf

By Express.—Two cents per copy will be added to our usual rates of subscription (to pay for the postage of the papers sent by express. If connecting express in the interior make additional charges, subscribers must themselves settle the same.

[Written for the Mining and Scientific Press.]  
Mining Experiments at Wisconsin Hill.

**MESSEURS, EDITORS:** During a recent visit to the interior, I had the opportunity of performing some practical experiments on "Cement Gold" at the Oriental mill, situated at Wisconsin Hill, Placer county, for the purpose of ascertaining the value of the claim and establishing a method for saving the gold; the result being highly satisfactory, I will proceed to lay it before your readers.

The company's claim covers an area of more than fifty acres, and includes the greater part of the town of Wisconsin Hill; a portion of the claim having been washed off by "hydraulic" means, leaves the "cemented gravel" exposed to view; it varies in depth from below the "bank" to the bed-rock, from five to thirty feet. All this mass of cement, is auriferous and suitable for milling purposes. The grains of gold (dust) vary in weight from ten grains to 5-100 of a grain; its fineness averaged 921 fine, in value about \$19 per ounce. The mill hands not being experienced, used coarse screens and a too copious supply of water during crushing; the result was that nearly the whole of the gold passed through the screens, was washed out of the mill, and lost; thus involving the company in debt, from which they have been extricated by the timely purchase of a part of the claim by some gentlemen of San Francisco. I may here mention that some of the gold exists in the state known by the miners as "rusty" gold—that is, it is coated with sesquioxide of iron, being the result of the decomposition by atmospheric influence of the sulphurets of iron, which exist in the state of minute crystals, disseminated through the conglomerate mass. These sulphurets are not auriferous.

I commenced the experiments with screens having the perforations one-eleventh of an inch in diameter, using a small head of water just sufficient to carry off the sands, crushing at the rate of four tons per stamp every twenty-four hours, (the stamps weighing about 600 pounds, drop ten inches, sixty-five times per minute). The result was 68.10 per cent. obtained in the batteries, 8.74 per cent. on the copper plates, 11.70 by pan amalgamation, and 11.46 per cent. left in the tailings. A series of these experiments were performed on cement from different parts of the claim with similar results; that obtained in the batteries varied from 63 to 74 per cent. while the yield was from \$2.20 to \$23.73 per ton.

Screens known as size No. 1, were then used, when all the gold was obtained in the battery and completely coated with quicksilver, except about the amount of ninety cents in value that was found on each of the four tables, per week, being about one cent in value from every ton of cement crushed. The experiments were successively repeated with the same results. The twenty stamps crushed at the rate of sixty tons of cement, from which the greater part of the larger stones had been separated, every twenty-four hours. It being desirable to crush even a larger quantity, an experiment was made with a screen of the same size placed at an angle of ten degrees, the top projecting outwards—result, 30 per cent. more crushing in the same time. With this last improvement, the crushing capacity of the mill will be eighty tons every twenty-four hours, the whole of the gold being obtained.

The sands from the batteries during these final experiments, were submitted to a careful pan amalgamation, and to a series of fire assays. Result—Slight traces of gold in each case not exceeding the value of a few cents per ton.

The claim is worked by twelve miners, who are employed in two of the tunnels, and sixteen Chinaman who work on the surface. The works, which are under the superintendence of Mr. Daniel Hosmer, are so contrived that a full supply of pay cement can be delivered in the mill during the twenty-four hours of the day—the surface cement at thirty cents, that from the tunnels about \$1.25 per ton; cost of milling, a trifle over fifty cents per ton. Mill capacity about 2,000 tons per month, equivalent to between 3,000 and 4,000 tons of the mass as it is extracted from the claim. Respectfully yours,

JOHN SCOTT, Metallurgical Chemist.

The cigar ship, Ross Winans, has recently made a successful trip in the English Channel.



**How DEEP CAN SHAFTS BE SUNK.**—The question occurs to the miner who sinks down a shaft for three or four hundred feet, "how far might I descend without being burnt out, or froze out; and which?" The student of natural science, who adopts the theory of internal heat, and recognizes, as correct, the present observed rate of increase of temperature with depth, would answer as follows: Water would boil at the depth of 2,430 yards. Lead would melt at a depth of 8,400 yards. Red heat would obtain at the depth of seven miles. Gold would melt at the depth of twenty-one miles.

The toy marbles, which afford such a large proportion of the daily amusement of the boys, are chiefly made in Saxony. They are chipped into cubes from a hard enclareons stone by the hammer, and then placed in concentric furrows cut in a fixed slab of stone, over which a platform of hard wood is revolved, while water is kept flowing on the stone. A very few minutes serves to give the cubes the form of perfect spheres.

**A LUCKY MAN.**—The *Amador Ledger* says that Mr. David Robinson, a ranchman, living three miles north of Volcano, picked up a nugget of gold, about a year ago, worth eight or nine hundred dollars. The same man, a few weeks since, *plowed up* a package containing nearly nine hundred dollars. The last amount had probably been buried by some one who has since died without revealing the secret of his deposits.

**WHAT IS IT?**—The *Pottsville Standard* says that in the vicinity of Orwigsburg there exists a peculiar substance, formerly called "Orwigsburg coal," which bears some resemblance to plumbago, or black lead, and has been used for many years by carpenters and others instead of lead pencils, by merely sharpening it at the point. It makes a distinct mark, is soft, and not at all gritty.

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*; or address DEWEY & VAUGHN, *Mountain Messenger* office, Downsville, Sierra County, Cal. 7v14lf

#### WOODWARD'S GARDENS! MUSEUM,

Art Galleries, Conservatories and Zoological Grounds, On Mission and Valencuela streets, between Thirteenth and Fourteenth streets.

#### Open Every Day!

ADMISSION: To all parts of the Gardens.....25 Cents. Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments. These Gardens are accessible by the Howard, Folsom and Market street Cars. Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

#### HAYWARD, COLEMAN & CO., IMPORTERS AND REFINERS

#### Illuminating, Lubricating, PAINT OILS!

CONSISTING OF KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', SEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

#### SPIRITS OF TURPENTINE & ALCOHOL

Now—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off. A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

#### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 13v13ml9 414 Front street, San Francisco.

#### California Steam Navigation COMPANY.

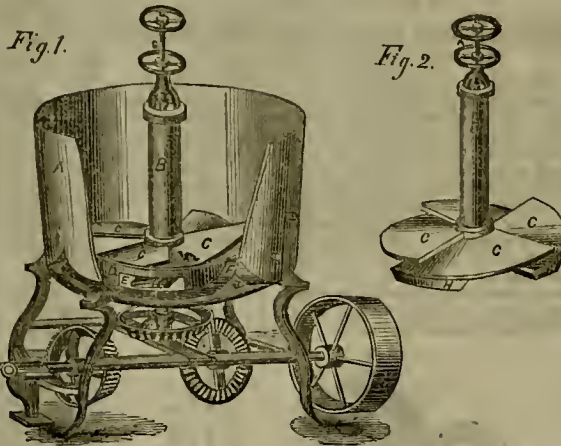
Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Office of the Company, northeast corner of Front and Jackson streets.

JOHN BENCHLEY, President.

#### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequaled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw miller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the miller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the miller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above, presses all under the miller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolita Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

Stair Work of all Kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.

**N. P. LANGLAND,  
STAIR BUILDER,**  
No. 40 Beal street,  
Between Market and Mission,  
SAN FRANCISCO.  
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Newel Posts and Balusters  
CONSTANTLY  
On Hand and for Sale.

**PACIFIC POWDER MILL  
COMPANY'S  
BLASTING POWDER!**

MANUFACTURED  
IN MARIN COUNTY,  
CALIFORNIA.  
FOR SALE BY  
**HAYWARD, COLEMAN & CO.,  
AGENTS.**  
414 Front Street, San Francisco.  
3v14-1m

**REMINGTON'S ARMOY.**  
Agency, 310 Washington st., San Francisco.  
**PRICES REDUCED!**

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, .42 to 6 inch barrel; Rifle Cases—an entirely new Arm—having a range and accuracy equal to a rifle, and the most perfect Carbine. All the new models for sale very low. 12v13lf

**ALBERT E. CRANE.**

**Pratt's Abolition Oil.**

**FOR ABOLISHING PAIN—THE BEST REMEDY IN** existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Glands and Muscles, Gramps, Colic, Diarrhea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McHAYLE & CO., Druggists and Chemists, 531 Sacramento street, opposite What Cheer House, San Francisco. 10v14-ly

**Just Published.**

**THE PHILOSOPHY OF MARRIAGE, BEING FOUR** important Lectures on FUNCTIONS and DISORDERS of the Nervous System and Reproductive Organs, to be held by addressing and including twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-ly

**HEALTH! HEALTH!**

No more Typhoid, or other Deadly Fevers

**Taylor's Stench Traps and Garbage Baskets,**  
To prevent this, purchase one of  
And promote the health, comfort and cleanliness of your family. (For description see Mining and Scientific Press, April 6, 1887.) Sold wholesale and retail by TAYLOR & SONS, at No. 420 Pacific street, San Francisco. 15v14lf

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**SAN FRANCISCO BRUSH FACTORY,**  
No. 211 California st., manufactures to order all kinds of  
**BRUSHES.**  
At lower prices than cost of Eastern importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fiber; also, Sluice Brushes from the same material. The Patent Rattan, Street, Stable, Fluo and Flume Brush, for which they have the exclusive right for the Pacific Coast.  
All orders from the Interior promptly executed.  
10v14qr. **FELDMAN, SIMPSON & CO.,** Proprietors.

**ROWLAND, WALKER & CO.,  
GROCERS,**  
Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.  
Goods delivered at any point within the city limits. 22v13-ly

#### Portable Steam Engines!

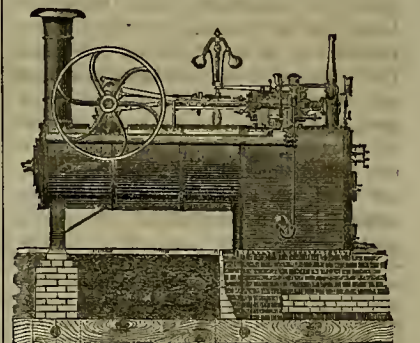
"Hoadley's" and "Hittinger's" Make.



**HOADLEY'S.**

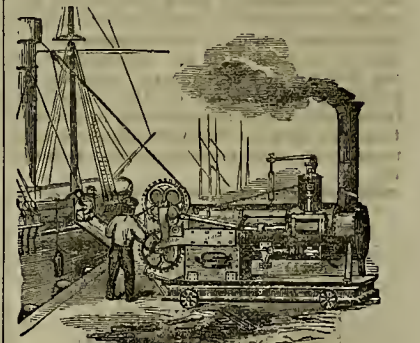
**FOUR SIZES,**

8, 10, 12, and 15-Horse Power,



**HOADLEY'S.**

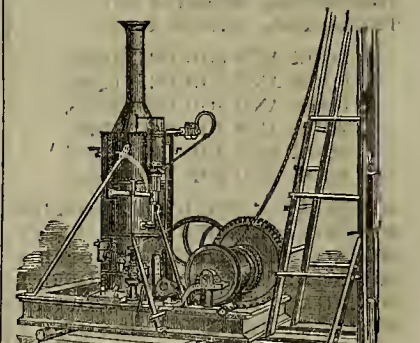
3 to 40-Horse Power.



**HITTINGER'S.**

**THREE SIZES,**

5, 7, and 10-Horse Power



**HITTINGER'S.**

**TWO SIZES,**

5 and 7-Horse Power,

**COMBINING THE MAXIMUM OF EFFICIENCY, DUR-** ability, and Economy, with the Minimum of weight and price. These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction accounts" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises), in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the remotest corners of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world. All sizes on hand from 3 to 30 horse power, with and without carriages. Also, Portable Saw and Grist Mills. For sale by **TREADWELL & CO.,** Corner of Front and Market streets. 9v14-6ml9







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Single Copies, Fifteen Cents.

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A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, MAY 25, 1867.

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Number 21.

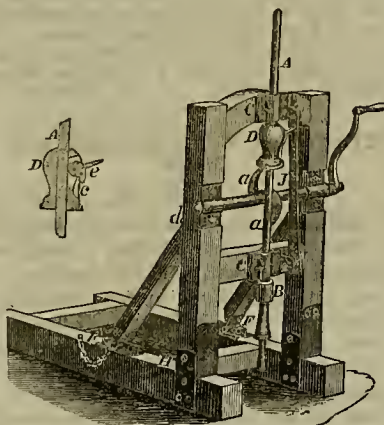
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## Draper's New Machine Drill.

Nicholas Draper, of Sacramento, has made application, through this office, for letters patent for an improved drilling machine, a correct representation of which is given in the accompanying engraving. The chief and novel features of this invention consist, first, in the device whereby the drill is raised by a cam and tappet, and so released as to fall and give the blow before the tappet descends, and whereby the drill may also be allowed to fall the required distance for any depth of hole, and that without altering the position of the cam, tappet, or any other part of the machinery. Second, by means of joints at H and F, and the braces, d, the drill can be inclined forward or back, so as to drive an inclined hole. The



machine can also, by that means, be folded up, so as to render its transportation more convenient. Third, an ingenious device is attached, by which the drill may be slightly twisted at each drop, so as to bore a smooth and straight hole.

The relative position of the various portions of the drill are readily seen from the perspective view herewith given. When the drill is ready for work, the point is supposed to be resting upon the rock (instead of being elevated, as in the engraving), and the tappet, D, rests upon the heel of the cam, a. In order to understand how the drill is raised, we must now refer to the sectional view of the tappet and drill stock, in the small side figure. E is a small cam, as will be seen by the axis being placed a short distance below the center, to which is attached a short lever, seen just over the letter e; e is a spring, which, pressing outward against the projection shown, causes the cam to force the drill-stock against the opposite portion of the tappet, D. Now, as the cam-shaft in the larger engraving turns, both the tappet and drill-stock will rise together, until the cam, a, is just ready to drop it. At this moment the lever, e, impinges against the top of a slot, in the guide, J, in the large engraving, by which impingement the cam, e, is slightly turned, forcing back the spring, e, by which means the drill-stock, A, is loosened from the cam, and drops to do its duty. The next instant, the tappet, D, is dropped by the cam, a, and is allowed

to slide down to the next cam, to again repeat the same process.

While the tappet and drill are being raised in close connection with each other, the arm, e, by the inclination of the slot in which it works, is made to rise at a slight angle with the perpendicular, by which the drill-stock is slightly turned. This being repeated at every blow, the drill is soon made to perform a complete revolution. The construction of this part of the machine is such that a greater or less degree of tension can be given to the drill, to suit it to the character of the rock which is being worked.

When it is desired to remove the drill to clean out the hole, all that is required is to remove the cap of the lower guide, A, which swings back on a hinge; the drill may then be inclined to the left without removing the stock from the upper guide—which swings around on a pivot to accommodate itself to the swing of the drill-stock, and at the same time holds it in position. By this device the drill is as easily removed for cleaning out the hole as an ordinary hand drill. This drill may also be used with runners for sinking to any desired depth—as for an artesian well, or boring for oil, etc.—the runners being inserted in the tappet instead of the drill. The invention appears to be simple, cheap of construction, and apparently practical. The upright posts should be about five feet high, with bottom timbers seven feet long. The entire weight need not exceed two hundred pounds.

THE LARGEST GUN IN THE WORLD.—We recently transferred the following item, from an exchange, to the columns of the MINING AND SCIENTIFIC PRESS:

"A 20-inch gun, recently cast in Philadelphia, was successfully tested with charges of sixty, eighty, and one hundred pounds of powder, the shot weighing over one thousand pounds."

The last steamer's mail brought us the following note, enclosing the item in question:

FORT PITT FOUNDRY,  
Pittsburgh, March 26, 1867.  
MESSRS. DEWEY & Co.—Gents:—The above item was cut out of your issue of February 23d. Allow me to correct you. The LARGEST guns in the world, and the only 20-inch guns ever cast, were made at these works, (owned by Chas. Knap, Esq.) SEVEN of these guns have been cast here, and are an entire success in every particular. They are all cast under the supervision of that famous foundryman, Joseph Kaye, whose experience dates back over thirty years. Perhaps the dimensions of this gun will interest you:

Rough weight.....	170,000 lbs.
Finished weight.....	116,400 "
Solid shot.....	1,000 "
Shell.....	750 "
Charge powder.....	80 "
Throw a ball.....	6 miles.
Length of bore.....	25 feet.
Diameter of bore.....	20 inches.
Diameter at breech.....	64 "
Diameter at muzzle.....	34 "

First gun cast February 24, 1864.  
Respectfully,  
O. METCALF.

INDIAN DEPREDACTIONS IN IDAHO.—According to the Idaho papers, the Indians are continually growing bolder, attacking the lines of travel, solitary miners and even mining camps. The citizens are organizing companies, in order to stop their further depredations.

## The Century Plant.

The "Century plant," as it is called, is the *Agave Americana* of the botanists. A considerable attention is being called to this plant, at the present time, from the fact that one of these extraordinary specimens of the floral kingdom is now about to flower in the garden of Mr. G. C. Potter, of Oakland.

The *Agave* has a short cylindrical stem, terminating in a circular cluster of sharp pointed leaves, some of which continue on the stem for many years. It belongs to the order *Amaryllidaceae*, and is popularly supposed to flower but once in a hundred years. The fact is that its efflorescence varies according to the climate to which it is subjected. When grown under most favorable circumstances, in its native climate, it comes to maturity and flowers in ten years. This period varies as above, from ten to seventy years, and it is altogether probable that when raised in a cold climate, and its maturity skillfully retarded, it might be kept from flowering, and at the same time vigorous for a century.

Just before flowering, this wonderful plant sends up a stem, often 40 feet high, which puts out numerous branches, forming a cylindrical pyramid of great beauty and symmetry, each crowned with a cluster of greenish yellow flowers, which sometimes continue in bloom several months. The growth of this central stem from a body which has been so long torpid is one of the most wonderful of the botanical phenomena. In the plant in Mr. Potter's garden, some sixteen days ago, a large bud or shoot was observed rising from the center of the plant. In eight days this shoot had grown seven feet—during one period of twenty-four hours it grew *thirteen inches!* The prevailing cold weather has probably rendered the growth of this flower stem much slower than it would otherwise have been, although it has now reached a height of about *seventeen feet*. It will probably reach an elevation of fully twenty feet before flowering—perhaps more. Its greatest elevation is reached only under the most favorable circumstances. And the period of its continuance in bloom is dependent upon the same circumstances. It will not bloom until it stops growing. It is exceedingly interesting to watch from day to day the ascent of this floral column. Mr. Potter has generously thrown open his gardens to the public for the benefit of a committee of ladies who are raising funds in behalf of the Oakland Congregational Church.

The *Agave Americana* is a native of the inter-tropical regions of America; but it has been naturalized in Spain, Sicily and the Barbary States. It never blooms but once; but like many ephemeral insects, the whole office of its life appears to be devoted to the sole end of the reproduction of its species; this done—its flowering having been accomplished and its seed brought to perfection, it dies, and, like the fabled Phoenix, never lives to look upon its successor.

DIAMONDS to the value of \$3,250,000 are annually sent abroad from the single port of Bahia, in Brazil.

IMPROVED HOSE CLAMP.—There are but few inventions of a minor character which carry with them so much real value as the hose clamp, invented by Mr. Hayes, a gentleman connected with the Fire Department of this city. Mr. H. filed a caveat for his invention some months ago, and has now made application for a patent. The two or three specimens of this clamp, all of which have hitherto been made, were used at the recent burning of the Cosmopolitan, and in every instance stopped the leak perfectly tight. The Department should at once order a large number of them, as we presume the inventor, now that he has applied for a patent, could have no objection to allowing them to come into general use. The mere fixing of a clamp to fire hose, is nothing new; but Mr. Hayes' improved method of fastening makes a perfect instrument of what has heretofore been of but little comparative utility.

We are pleased, in this connection, to mention that the Department have recently purchased some 2,000 feet of additional hose from Mr. Fulton, of this city. Some of this hose was submitted to a pretty severe trial a few days since, with the following results:

First Trial.—Seventeen hundred feet of hose was submitted to 150 pounds pressure without bursting.

Second Trial.—Two streams of 250 feet for each line of hose stood up to 160 pounds pressure, when one of them burst.

Third Trial.—One length of 250 feet burst at 175 pounds pressure.

Fourth Trial.—Two hundred and fifty feet of hose, same length as above, clasped with Hayes' clamp, rose to a fraction over 180 pounds before bursting.

SAVING THEIR SULPHURETS.—Some idea of the attention that is now being given to concentrating and saving sulphurets may be inferred from the great amount of machinery for that purpose which is now being purchased. The following orders for Hendy's Concentrators, are now on the books of the Union Iron Works in this city. Four for the Gould & Curry mine, Virginia City; four for the Vulture Mining Co., Prescott, Arizona; two for the Plymouth Rock Co., near Stockton; three for the Hunter's Valley Mining Co., Mariposa county; four for Francis, Valentine & Co., Sierra county, and one for E. A. Halstead, Thompson's Flat. These concentrators are made of iron, and leave the foundry ready for immediate use as soon as they reach the mine. They may be seen running at any time at the Union Iron Works.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

### The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 206.]

#### MAMMOTH DISTRICT—CONTINUED.

The next noticeable belt as we ascend westward is of limestone, and lies on both sides of the cañon, at the point in which Upper Weston is built. Here several shafts have reached the depth of one hundred feet, showing an extremely high grade of ore. Further up, near the summit, where lodes occur in slate, they are rich in both gold and silver.

From this summit, which we have ascended by a grade so gradual that one scarcely realizes that he is ascending, we have a grand and inspiring view of the great valley of Walker river, reaching nearly to the Sierra Nevada, the eastern border of this valley lying two thousand feet below, and seemingly almost under us, so abrupt is the western slope of the Mammoth mountains. Down among the foot-hills, along the east border of the valley, are located a great number of remarkably rich and large lodes of gold, silver and copper; but this region is so inaccessible and desolate that very little work has been done towards their development.

#### AN IRON MINE.

We are now standing almost over the mammoth iron lode of Nevada, which I had nearly forgotten to mention, so little are the inferior metals thought of in this section. This mine has been held by a company for several years. W. T. Jones, the principal owner, is an old iron worker, and is confident of its immense value and importance a few years hence, when the cañons of all these mountain ranges shall resound with the sound of the steam whistle and the clatter of thousands of stamps. This may be described as a mountain of iron ore, of eighty per cent. richness, and so abundant that the present generation could not exhaust the outcrop.

#### WATER SPOUTS.

This slope of the Mammoth mountains is subject to those terrible floods called water-spouts, caused by the bursting of rain clouds, that drift eastward during the summer months over this vast scorching plain from the Sierra Nevada. These clouds, coming in contact with this great barrier, with its cooler atmosphere, are instantaneously condensed, and the vast volume of water rushes down the mountain side in a body, gathering in its course till it gains, like a huge wave, a magnitude and velocity fearful to contemplate. Those who have witnessed mild occurrences of this kind, speak of the effect as being terrible beyond their power to describe. Nothing can resist their force; and this vast harrier, two thousand feet in height, is literally being eaten away by these fearful floods.

About one mile south, a fine grade has been made down the west side of this range, following the bed of a long winding cañon. This is on the Wellington road, leading from Austin to Aurora and California. From here we have a fine view of the road, winding out in the desert in the direction of Walker Lake, till lost to our sight. Twenty-eight miles due west we observe two conical peaks rising out of the sandy desert. Those two isolated mountains comprise Hot Springs District, lying too far west for our line of travel. It is a very interesting region, however. In one of these sugar-loaf peaks there is an astonishingly rich lode of gold-bearing quartz, the peculiarity of which is, that it runs nearly horizontally through the mountain, out-cropping two-thirds of the distance around. Northwest of this district are vast plains, covered with salt and soda in about equal parts, beautiful agates, cornelians, and even inferior opals are found here; also most beautiful silicified wood. Mammoth District, with its countless lodes and great variety of scenery, justly bears the palm in regard to timber and fuel.

#### LAST CHANCE DISTRICT

Is situated in the same range, five miles south of Mammoth District, and is abundantly supplied with wood, as are all other

districts in these mountains. Here the lodes occur in a fine textured granite near the summit, or I might say on both slopes; for here we are in the lowest pass of the range, which widens out considerably, forming numerous grassy parks, surrounded by symmetrical sugar-loaf hills, covered with the deep green foliage of the juniper and piñon. With the exception of the granite belt in which the lodes occur, the hills on the south side are formed of volcanic trachyte, while on the north they are of obsidian. The quartz lodes lie on the hill, gently sloping to the northeast. They are not numerous, but very large, cropping out boldly for a long distance. They were all located by one company from Mammoth, in June, 1865, since which time but little work has been done, owing to the following unfortunate circumstances: In September, 1865, Mr. James Dunn, of New York, who visited this section with General W. S. Rosecranz, purchased, on the recommendation of the latter, this entire property of the original owners, paying only in part down. On his way to New York, in the following October, he took passage at Sacramento, on the ill-fated steamer Chrysopolis, and was among the victims of that terrible explosion, being so badly injured that he died soon after leaving Aspinwall. Notwithstanding the property has been subject to re-location (by the local laws), the rights of his heirs have always been respected by the miners of this vicinity, and it is not a little strange that the balance of the purchase money is not paid and the property improved.

[To be Continued.]

[Written for the Mining and Scientific Press.]

### Mining at Virginia City and Austin.

AUSTIN, NEV., May 5th, 1867.

EDITORS PRESS:—In coming to this place, I stopped a short time at Virginia City, where a marked improvement in the state of things existing there for the past two or three years was visible; in fact, it is much to be questioned if the mining interest in that section was ever before in such a healthful and generally satisfactory condition as at present. The leading mines at that place are no doubt worked in the interest of the stock brokers just the same now as ever; but it has latterly become the case that a mine must have been brought to a productive condition and present good evidences of permanency and wealth, or at least a reasonable promise of such, before it can be made subservient to the purposes of this class—an absolutely worthless or unknown piece of mining ground no longer answering as a vehicle for speculative operations. Reduced to these conditions, the business of dealing in these mining stocks, though still sufficiently precarious, is less dangerous than formerly. Just now, nearly all the claims that can fairly be ranked among the producing mines on the Comstock lode are yielding moderately well—some of them very largely, though the quantity of ore being raised is not so great, nor of so high average grade, as was turned out several years ago. This does not result so much from any absolute deterioration in the quality of the ore as from the practice of assorting them less closely, a vast amount of lower grade being now worked that were formerly rejected. Thousands of tons taken from the dump piles of the mines first opened here, during the past year, been milled with profit. Portions of the lode passed by in the early days as being too poor to warrant removal, are also being stoped down and brought to the surface, the lessened price of labor and cost of reduction leaving a good margin for gain after defraying these expenses.

The collection and working of sulphurets, carried on about Virginia and Gold Hill on a very extensive scale, has also grown into a new and important branch of mining, adding another interesting feature to the economies effected in the business. These sulphurets, consisting of the particles of un-reduced ore escaping from the mass passed through the mills, is saved by means of sluices, the bottoms of which are lined with gunny sacks and blankets. There are miles of these sluices in operation on Gold and Six-Mile cañons, which, in the aggregate, collect immense quantities of sulphurets, or tailings, as they are more commonly

called, and which the owners dispose of to the mills, or have them worked on their own account. They yield by pan process from \$18 to \$25 per ton—the average being about \$20. The gross yield of these tailings for 1866 is estimated at \$72,000, and for the present year at \$164,000. Vast quantities are gathered, after the slum has passed all the sluices, in reservoirs, some of which cover acres of ground and will hold millions of tons, there being in several of them many thousand tons already collected. The contents of these larger receptacles are, of course, much poorer than what is gathered by the sluices, being worth but six or eight dollars per ton; yet the quantity saved is so large as to render the business of collecting them quite profitable. When we consider that the ores are now worked much more closely than formerly, and see how large a percentage of the metal is still lost, the fearful waste attending early operations becomes fully apparent. Some estimate that one-third of all the silver contained in the ore milled at Virginia during the first four or five years, was lost, making an aggregate of fifteen or twenty millions thus run to waste! This calculation is no doubt within the limits of actual loss, not more than seventy-five per cent. of the metal contained in the great mass of ores there being now saved.

The mills in this region (Austin) work much more closely—the chloride ores, treated without roasting, being worked within twenty per cent. of the pulp assay, and the sulphureted ores, which are roasted, within twelve or fifteen per cent. The cost of reducing the chlorides at the mill here is \$25 per ton—\$45 being charged for the sulphureted ores, as against about \$14 for the low and \$50 for ores treated by roasting in the vicinity of Virginia. But few ores are worked here that yield less than \$100 per ton, the average of that sent to the mills being about \$150. A great deal of that now being raised from the mines in this neighborhood will yield \$400 per ton. The average yield of the ore from the Comstock lode is now scarcely more than \$30 per ton, the value of claims on that ledge depending on the large body of ore they contain.

In another letter I will speak more fully of the mines and their product, the mills, etc., in this region.

H. DEGROOT.

[Written for the Mining and Scientific Press.]

### Telegraphic Communication with Mines.

FORESTOWN, May 15, 1867.

EDITORS PRESS:—The loss of the current in the late attempt to establish telegraphic communication with the underground workings at the Pewabic mine, Lake Superior, is probably due to the difference in the electrical tension between the surface and interior of our globe. Without at this time attempting to show why it is so, I shall premise that the surface of the earth is a vast reservoir of free electricity, and that, in telegraphing, the current is affected by displacement. In ordinary telegraphing a single wire is used, and the earth is depended upon to return the current. When there is a difference in the electrical tension between the termini it renders communication difficult, and when the distance is great, and the atmospheric conditions are such as to greatly disturb the electrical equilibrium, it may, during such disturbance, be entirely suspended. In a spherical body, the distribution of free electricity is entirely superficial—each portion is electrified alike. Now the loss of current in thirty feet depth, would seem to indicate that the free electricity of our globe is similarly distributed with that upon the smaller globes used in experiments. In order to avoid or overcome the difference in electrical tension, between the surface and the underground workings of the mine, I would recommend that the circuit be completed with wire. If it fails to work at either or both ends of the line, ascertain the depth at which it will work. Then increase the power of the battery by adding plates or cups until it will work to the required depth, and report progress, with particulars, to the MINING AND SCIENTIFIC PRESS.

F. A. H.

VALUE OF SILVER AND SILVER ORE.—An ore that contains one per cent. of silver, yields at the rate of \$396.97 per ton, mint value. One ton of silver is worth \$39,697. The United States mint pays \$1.22½ per ounce troy, for silver of 900 fineness.

[Written for the Mining and Scientific Press.]

### Revolving Calciners.

NEW YORK CITY, March 25, 1867.

EDITORS PRESS:—I am happy to see that one of your correspondents is about to introduce a more simple and efficient mode of desulphurizing. As the general run of mining men may not be acquainted with the principle advocated, allow me to say, that its efficiency depends on the regularity of the particles of crushed ore falling steadily and evenly over the rakes or scrapers, placed diagonally across the furnace, allowing the heated air to impinge against them. The bed, which is made of iron and covered with fire-brick or tile, revolves slowly; the actuating gear being placed beneath, and thus away from the action of the fire. The scrapers are fixtures and made of cast iron, supported by a cone in the center at one end, and in the walls of the oven on the other, beveled to an angle of 40°. The crown of the arch is about sixteen inches high in the center, diminishing to eight inches at the sides, and from twelve to sixteen feet in diameter. The ore is fed by a hopper, regulated by a valve; the feed being just sufficient to allow a perfect desulphurization by the time it works off toward the edge of the oven, where it is thrown into a receptacle to receive it. The fire-place is on one side, and the chimney on the other. The whole is perfectly self-acting. On a mine where there is sufficient ore produced, the cheapest way is to have only one central chimney, four ovens being arranged around it. Those commonly in use are built within retaining walls, admitting of a dripping floor being constructed over the ovens. The ore coming wet from the dressing-floors, is spread out on this oven floor, where it becomes perfectly dry before being put into the hopper. One man can readily superintend four ovens, which ought to burn from forty to sixty tons per day. They have been in use for the past six or seven years in Cornwall, among the tin mines. Those in work at Wheal Vor, Cook's Kitchen and Dolcoath, are considered good patterns. Since they have come into use, nearly all the old ovens have been thrown out, as one revolving oven will do the work of six of the others. They cost but little, and do their work perfectly. In connection with this improvement, I advise the introduction of Carpenter's Patent Jigg—it costs about \$700. The ore, as it comes from the stamps or crusher, passes into a receiving hopper, from whence it is distributed into four sieves. These sieves are fitted into a cast iron plate over a covered cistern. Through this plate a plunger works, throwing the water up against the bottom of the sieves, keeping the ore in a constant state of agitation, the heaviest particles of which fall down by their excess of gravity, through the sieve into the cistern below, while the skimmings are thrown off the surface in the usual manner. One man and a boy will work over thirty tons of ore per day. It is not a new invention, for it has been in use many years at Frowey consols, and other mines in Cornwall; but the improvements in the regulating gear, and some other modifications, admit the present machine to be patentable. There are several at work on lead mines in the State of New York, and Capt. Dennis, of the Erie mine, Orange county, informs me he can warrant one machine to dress, perfectly clean, the ore as fast as it comes from the crushers. Now this is a very great saving of time and expense, and from what I know of the old machines in England, and what my fellow miners tell me here of the improved jigg, I think it ought to be universally introduced; but more especially where labor is expensive. Our firm is about erecting one on a mine in Virginia, for dressing sulphurets direct from the strakes, the result of which I will communicate *pro et con*. We have also at our office, just sent from London, a sketch and description of "Hunt's Patent Jigg." This is also on the plunger principle. It is said to be perfect in its action, and far superior to anything else in England. We are making drawings of the "Carpenter Jigg" for several mining companies, and will do the same for any of our Colorado or California friends who would like to order them. The patent right is only \$250, and the machine is so simple that it can be made by any ordinary mine carpenter. Now, if it will dress sulphurets as fast and as clean as it does lead or copper ore, the entire cost of crushing and dressing need not exceed \$1.25 per ton, power included.

CHARLES S. RICHARDSON.



## Mechanical.

**STEEL-HEADED RAILS.**—Mr. S. L. Potter, of the Wyandotte (Penn.) Rolling Mills, has produced a steel-headed or "plated" rail, which, it is thought, will prove superior to a rail made entirely of steel. This rail is produced by a peculiar mode of piling, which consists in so placing in the furnace a rail pile, surmounted by a bar of Bessemer steel, that the true welding heat of both iron and steel is reached at the same time by causing the steel to receive its heat through the iron. These rails cost but forty per cent. more than the ordinary iron rail, while steel rails cost fully double those of iron. This compound rail has been subjected to a series of crucial experiments, which, it is said, have proven it to be much stronger than the steel rail. Should the anticipations of the inventor be realized, the "steel-headed rails" will prove a most important invention.

**ORIGIN OF TUBULAR BOILERS.**—It is believed that the earliest effort at producing a boiler with tubes for the purpose of exposing a greater surface to the action of the fire, was made by an American named Barlow, in the year 1793. The record of the invention is found in the French patent office under date of August 24th of that year, with an illustration. Zera Colburn, however, traces the origin of the idea to Neville, of London, in 1824. A copy of the record and illustration from the French patent office is given in the American Artisan, of Sept 6, 1865, from which it will appear that Barlow, the American, had given a big hint anyhow; whether Neville knew it or not. This important improvement has been variously ascribed to Seguin, Stevenson, Booth and Neville. They all did something toward it at an early day; but there is good reason for suspecting that they all got more or less of their inspiration from the American mechanic, Barlow.

**HARDENING BURNT CLAY.**—At Rivières, in France, they make tiles and bricks of a kind of sand clay, which contains 32 per cent. of chalk. When first burnt, they are so tender that, unless they are carefully handled, they fall to pieces. As soon however, as they are cold enough to touch, they are quickly removed from the furnace, and stacked. They are then soured with water, by the action of which they are so hardened that they may be used the next day for building. The fact is, perhaps, easily capable of chemical explanation, and brick-makers may be able to gather a hint from it.

**THE UTILITY OF WATER ON A FORGE FIRE.** It is a common practice of blacksmiths to occasionally sprinkle water upon their forge fires for the purpose of checking the blaze; thus rendering it more agreeable to adjust the iron properly in the fire while heating. It has recently been discovered that a protracted application of the water in the form of a mist, or fine sprinkle, accomplishes this object more thoroughly, and is attended with a great saving of time and fuel. By this action the heat is confined within the mass of coal, but very little being lost by radiation.

**AN ELASTIC GLUE.**—Take a quantity of good carpenter's glue, pour cold water over it and let stand until it becomes a gelatinous mass; then put it into a warm water bath until it becomes dissolved. Now add as much glycerine as there was glue in the first place, then mix and stir up well, and continue to beat it until the water has become evaporated. The cooled substance will be an elastic glue, suitable for a variety of purposes, such as stamping, etc.

**THE THERMOMETER** was invented in Holland, about the year 1609. The merit of its construction is not ascribed to any particular individual, but is distributed among many, as it was gradually brought to perfection.

**GLASS COVERING FOR WOODEN FLOORS.** A German chemist recommends soluble glass (silicate of soda) as a coating for floors. Before applying the coating, the floor should be well cleansed, and the spaces between the boards be filled with a mixture of silicate and chalk, or gypsum made into a thick dough, which quickly sets into a hard mass. The floor may then be brushed over with the soluble glass. If colors are employed, most vegetable pigments must be avoided, because of the alkali in the solution. The mineral colors used should be ground with equal parts of water and skimmed milk before they are mixed with the soluble glass. It is applied with a stiff brush, and as it dries quickly, a second coating may be put on in half an hour. It is said a brilliant polish is secured by finishing with a coating of oil. This process protects the wood and renders it almost fire-proof, and when colors are used is highly ornamental. It is reported to be well adapted for stores, offices and public buildings.

**REMOVAL OF FIRE-DAMP FROM MINES.**—A Mr. Williams, from Blairfin, Wales, has been illustrating, at Barnsley gas works, a scheme, by which he states coal mines may be cleared of fire-damp. The desired result is proposed to be obtained by the use of an apparatus consisting of an inverted syphon, to which is connected a pipe from the mouth of the shaft. The short end of the syphon is inserted in the place containing inflammable gas, and the pipe from the top is attached to the other end. The air first being extracted from the pipe, the gas, which is lighter than the atmosphere, will rise to the top. The experiments were, it is said, successful, and witnessed by several mining engineers.—*Builder*.

**TO GALVANIZE IRON.**—A good way to galvanize cast iron articles, such as gears and other small parts of machinery, is given in the *Scientific American*. Heat the castings to a red heat, plunge them into a clear muriatic acid, to detach the scales and thoroughly clean them, and then immerse in a bath of melted zinc. As soon as the iron has attained the melting heat of the zinc, it is removed. Great care should be taken, or in plunging the iron into the zinc while wet, the zinc will be thrown in the face of the operator. The zinc should be covered with sand, and the castings must be immersed very slowly.

**PRECAUTIONS IN USING ZINC.**—A report of a committee appointed by the Central Society of Architects, in Paris, recommends "that zinc, which was at first rejected, but is now so generally used, should be applied with great care, as certain precautions, very simple, but never to be overlooked, are indispensable. Thus, contact with plaster, which contains a destructive salt, is to be avoided; also, contact with iron, which is very injurious, and liable to cause a rapid oxidation. Eave-gutters should always be supported by galvanized brackets, and no gutter or sheet zinc should be laid on oak boards."

**DABOLL'S FOG TRUMPET** is now being introduced into Europe. Three of these machines have recently been put up by order of the English Government—one on the English coast, one on the coast of Scotland, and one near Halifax, Nova Scotia. Daboll is a genuine American inventor, and his useful device, so important to the interests of navigation, is eliciting high encomiums, both in Europe and America.

**THE INVENTOR OF THE RIFLE** is not known. The principle upon which the rifle ball is projected was known to the North American Indians when this continent was discovered. Their arrows were feathered spirally, and sped to their mark in the same manner as a rifle ball.

**A MAMMOTH LATHE.**—There is a lathe in Forrester & Co's foundry, at Liverpool, England, which has a face plate twenty feet in diameter and a slide rest twenty-five feet in length. The weight of this machine is seventy tons, and it is capable of boring a cylinder ten feet in diameter.

**THE TONGUING AND GROOVING MACHINE** was invented by Sir John Rennie, an Englishman, in 1814. He used revolving cutters. He was also the inventor of the first machine for planing iron.

**THE PRINCIPLE OF THE STEREOSCOPE** was well known to Euclid, who lived B. C. 300. It was also distinctly described by Galen, the famous Greek physician.

## Scientific Miscellany.

## Wilde's Electric Light.

We learn from the English journals that Mr. Wilde is still engaged on his magnificent electro-magnetic light. His machine has been a great source of attraction to the enrons and scientific during the past winter. The previous ideas of the value of this wonderful discovery have in no wise abated by his recent and continuous exhibitions; and the possibility of turning the discovery of this new mode of the development of electricity to practical purposes, is more than ever confirmed. The chief value of Mr. Wilde's discovery consists in its completeness and power, which places it far in advance of the conceptions of any of his predecessors in that field of research. His machine is a compound one—a magneto-electric apparatus and an electric-magnetic one. The latter consists of a very large electro-magnet, which is charged by the former; the armature therefor revolving within the magnet cylinder, and abstracting twice in each revolution, the fullest quantity of power deducible therefrom. This electrical force, so gained, can be made to evolve light, heat or dynamical power, according to the construction of the armature.

When used for illumination, the light is given off from carbon points, half an inch in diameter, and generated from the electrical currents direct, without the intervening action of any commutator. The currents are therefore intermittent, or constantly being reversed, which, when the revolutions of the armature are slow, have a flashing appearance, clearly perceptible to the eye; but when driven at a high velocity—say 2,000 rotations of the armature—the flashings, numbering 4,000, are entirely imperceptible, and appear one continuous blaze of the most intense brilliancy. The first application of the invention will be to light-house purposes; but it is the intention of Mr. Wilde to immediately institute experiments with the view of giving his invention a wider range of usefulness—applying it probably to metallurgical purposes, and as a motive power. We shall watch its development with no little interest, and shall not fail to note any progress which may be made.

**WATER BAROMETER.**—A mammoth water barometer was constructed by Prof. Daniel, of London, some thirty years ago, whose tube (of glass) was thirty-four feet long. It was constructed for more accurate observations than could be made with a mercury barometer. A water barometer is superior to a mercury one for observing the changes of pressure in the atmosphere, from the fact that when a variation of one inch only takes place in a column of mercury, the same change in the atmosphere would be indicated by a movement of more than a foot in a column of water. Hence, slight changes would be readily indicated by a water barometer which could never be noticed at all with a column of mercury. It is said to have been a most interesting sight to witness the operations of this barometric column of water in a quiet apartment during the prevalence of a gale of wind outside. In the inside of the large glass tube, the water on such occasions would, at times, tremble, and then move rapidly up and down, as if animated by some spiritual influence. These movements were the records of the unseen, but not unfelt, waves of the aerial ocean which surround our globe, and which are tossed to and fro by the unequal distribution of the solar rays.

**SINGULAR REGENERATION.**—It is a singular fact, first announced by Spallanzani and since verified by M. Phillippeaux, that if any portion of a member of the salamander—a water lizard—be cut off, regeneration takes place. This, however, is only when a portion of the member is left upon the body. If the member be entirely removed, no regeneration occurs.

**CAUSE OF THE FOREST GROWTH OF MICHIGAN.**—It is well known that the State of Michigan contains the most magnificent and extensive forest growth to be found east of the Rocky Mountains. This forest growth is due to the kindly influence of the waters of the great lakes which surround it. The prevailing winds which reach the area of that State are so modified, softened and charged with moisture, that the average temperature of the region over which they pass, is considerably below that of other regions, in the same latitude, either east or west. For the same reason, the eastern shore of Lake Michigan is becoming celebrated for the abundance and profusion of its fruits, and the certainty of its crops. The Peninsula of Florida is for the same reasons noted above, covered with a dense and most valuable growth of timber, chief among which is the well known live oak.

**THE KINDLY INFLUENCE OF EVERGREENS.** The utility of evergreens is not altogether confined to their pleasing effect upon the eye. Their influence is such as often to keep flowers growing near them in bloom, long after those not thus protected, have been destroyed by the frost and rude winds of autumn. Evergreens should form a conspicuous part of the landscape of every farm in cold latitudes. Many of our western farmers are setting them out in large numbers, as protectors to gardens, homesteads and cattle. Evergreens should occupy a large space in gardens, lawns and farms subjected to the bleak winds in the vicinity of this city, and all along the Pacific slope of the coast range of mountains in this State. Experience has shown that there is no difficulty in making them grow, even in the most exposed situations of this peninsula.

**UTILIZING A CHEMICAL CURIOSITY.**—The property of supersaturation belonging to certain salts has long been known to chemists, but, we believe, has never yet been turned to any practical account. M. Jeanne has recently proposed to utilize this singular property by employing it as a means of separating one salt from another. Thus 100 grammes of water at 118° will dissolve 335 grammes of nitrate of potash, and the solution will crystallize either in a close or open vessel. Now, suppose a mixture of 300 grammes of alum and 335 grammes of nitrate of silver be dissolved together; the alum will remain in the liquid in a state of supersaturation and the nitrate of potash will crystallize alone, just as if it had been dissolved in pure water.

**GEOLOGICAL PROGRESS.**—Although the record of the stones is yet but imperfectly read, each new discovery adds vastly to our store of knowledge in this direction by supplying additional pages, the absence of some of which have hitherto been unsuspected, while that of others have long been felt and diligently sought after. The history of nations is written upon imperishable pages indeed, but with a fallible hand; but the teaching of the rocks, as recorded "by the slow-moving finger" of time, is a record as perfect as the work which comes from the hand of the Creator himself.

**ELECTRICITY THE CAUSE OF ANIMAL COLORS.**—M. Nicolas Wagner has recently brought before the Academy of Sciences experiments which seem to show that electric currents are the cause of the colors, at least of some animals. These experiments were made on a species of diurnal butterfly (*Vanessa urtica*). Electric currents changed the reds into orange, and the blacks into red; and the most feeble current, especially if from a constant battery, produced black spots, the shape of which had a relation to the current. He ascertained, by means of an extremely sensitive apparatus, that not only does electricity modify and even produce colors, but that those found in the butterfly are due to currents in the wings of the animal—the most energetic of which issues from the base of the wing, and follows the middle nervure till it reaches the outer edge.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

64,203.—IMPROVEMENT IN CALLIPERS.—Jas. H. Culver, San Francisco, Cal.:

What I claim is a pair of callipers, either for inside or outside measuring, constructed with the joint, C, and shoulders, h and c, substantially as and for the purpose set forth.

The nature of this invention is to provide an improvement in callipers by which the difficulties met with in obtaining the dimensions of anything, in which the callipers must be changed before they can be removed or overcome.

64,212.—IMPROVED FIRE LADDER.—George K. Foster, San Francisco, Cal.:

What I claim is, 1st, The segmental rocks, F, G, and pinions, T, T, operated by the gear, n, g, and hand wheel, c, substantially as described.

2d, I also claim in combination with the ladder, the swivel joint rings, r, r, on the ends of the fulcrum rods, to support and carry up the hose when the ladder is raised for use.

The nature of this invention is to provide a fire-ladder and hose carriage combined, constructed in such a manner as to be easily and rapidly transported from place to place, to be very compact, and the ladders at the same time to be capable of as great extension as may be necessary or as is compatible with the strength of the material. The mechanism by which this is done, was fully described in our issue of March 23d, 1867.

64,220.—IMPROVEMENT IN KILNS FOR DRYING AND CURING HOPS.—Wm. M. Hayne, Sacramento county, Cal.:

What I claim is a hop kiln, constructed with boxes, having the slides, F, F, or their equivalents, substantially as and for the purpose described.

This invention relates to a kiln for drying hops, so constructed that the labor and time usually required for such purposes will be greatly lessened, while the hops will be much more easily and thoroughly dried, and be in a finer condition for the market. The device by which this is done was fully described in our issue of Nov. 24th, 1866.

64,221.—IMPROVEMENT IN QUARTZ MILLS.—James Hitchens, Nevada City, Cal.:

I claim an ore pulverizer, consisting of the containing cylinder, A, and the supporting plate, B, constructed and operated substantially as and for the purpose described.

The object of this invention is to provide an improved ore pulverizer, by which ore that has been broken into small pieces, can be reduced to an impalpable powder, thereby greatly facilitating the process of amalgamating the precious metals which it may contain. This invention has been fully described in this paper.

63,979.—MACHINE FOR GRINDING AND AMALGAMATING ORES.—Phillip Hinkle, assignor to himself and Charles S. Clapp, San Francisco, Cal.:

I claim, 1st, The employment of the removable side dies, G, G, to form a perpendicular grinding surface on the sides of the tube or pan, substantially in the manner and for the purpose described.

2d, The employment of the perpendicular muller-hangers, E, E, loosely hung on the pins, C, C, carrying the removable mullers or grinding-plates, F, F, of the shape shown in the drawings, thrown and passed laterally by centrifugal force against the perpendicular grinding surface, G, G, when the arms, B, B, are revolved with the supporting lip, I, and bearing surface, D, upon the arms, B, B, by which arrangement the pressure is lightest at the feeding point and heaviest at the heel of the muller, and also the provision for loading the muller-hanger to counterbalance the loss of weight by wear of the face of the muller, F, substantially in the manner and for the purpose described.

3d, The shape and arrangement of the cover of the pan, U, so as to form a flattened funnel-shaped dish, with annular grooves, S, for mercury, and raised current breaking ring, W, on its upper surface, the collars or projecting flange, V, with the apertures, R, R, under it, by which the escape of the pulp is permitted, and its current directed so that it is returned to the center, and a continual circulation maintained.

RE-ISSUED.—2,566.—METHOD OF OPERATING RAILROAD PUMPS.—Sam'l Moss, assignee of Gilbert Cole, San Francisco, Cal. Patented Dec. 16, 1862:

I claim, 1st, Conducting by means of connecting-pipes the steam generated in the locomotive boiler to a stationary engine by the road side, to operate the same as for the purpose set forth.

2d, The combination of a stationary engine and pump, the connecting-pipes c, c, and a locomotive boiler, as and for the purpose described.

## RECENT INVENTIONS.

AN IMPROVEMENT IN ROCK DRILLS AND DRILL MANUFACTURE.—Christian Jurgens, of Weber creek, El Dorado county, has made application for a patent for an improved rock drill and devices for more readily making and more perfectly shaping them. The drill consists of three angular cutting bits, having an obtuse point, thus giving it three regular incline, faces and three corners. When the drill has become worn and dull from use, the inventor uses a die, by means of which the smith may more readily and perfectly restore the drill to its original shape. In forming the original drill, the inventor uses a swage block, into which the bar of metal, after being heated, is placed, horizontally, where it is hammered and turned until properly shaped to receive its cutting faces and points. This swage may also be advantageously used in repairing drills and in keeping the drill in proper shape as it is gradually worn up by use and the requirements of new cutting edges. By the use of these shaping tools, a drill may be more perfectly and readily shaped and sharpened than in the ordinary manner of hammering on an anvil. Mr. Jurgens says his drill has been worked for months, with abundant success, fully proving its superiority.

A CALIFORNIA SNOW PLOW.—J. L. Nova, of Placer County, has devised quite a novelty in the way of a snow plow for railroads. A sort of wide-mouthed scoop takes in the snow, which is passed up and along to the rear of the car, by means of an elevator. When in open ground, the snow is conveyed on either side, to a wide shoot and thence outside of the track. In deep cuts, when the receptacle is filled with snow, the train is backed out of the cut, and the snow readily disposed of. In case the plow encounters a bank extending partially across the track, the machine is so devised that the snow may be readily conveyed to the opposite side of the track. Huge knives, which may be extended from 25 to 30 ft. in length, are projected in front of the plow which serve to make the first cuts in getting through the impediments which may offer. The machine has been tested and fully answered the expectations of the inventor. A larger one is nearly completed, from which still better results are expected.

CORAL-LIGNIN.—This is the name given to a new artificial substance by the inventor. It is said various articles of the new manufacture will be shown in the Paris Exposition. The material is made by macerating potatoes, turnips and carrots in water containing about eight per cent. of sulphuric acid for twenty-four or thirty-six hours. The acid is then washed out by repeated applications of fresh water. This must be continued until the center of the vegetable will not redden litmus paper. When potatoes are used, it will be found that considerable disorganization has taken place; they are whiter and soft. They must then be wrapped in blotting paper and carefully laid under warm sand, or upon chalk or gypsum. When dry, the potatoes will be found to have shrunk to about one-half their original volume, and in external appearance they will exactly resemble meerschaum. By treating the macerated potatoes with caustic soda, the starch and cellular tissues are made to unite and form a substance resembling horn. Turnips may also be similarly treated, so as to resemble stag's horns. Thin slices may be used as veneers, and soaked in glycerine and water they become flexible as leather. Carrots thus treated resemble leather, and may be used for handles of knives, umbrellas and whips.

A MARINE NOVELTY.—Capt. Jno. Rowell, of Brooklyn, N. Y., is engaged in building a miniature vessel, 26 ft. long, which he proposes to propel without the use of steam or masts. He uses the wind, indeed, for his motive power; but instead of sails and masts he has erected a wind-mill on the deck, which is made to drive an ordinary propeller. The mill, which consists of four fans, is placed about seven feet above the deck, and the canvas covering the fans is so contrived that it can readily be reefed or furled by means of halyards from the deck. In case of a storm at sea, he can easily take in sail and leave his vessel to, with a drag. Capt. Rowell proposes to cross the Atlantic in his tiny and novel craft.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
May 25, 1867.

## CITY STOCKS.

City Stocks continue inactive, and the offerings since our last reference have been very meagre. Sales of San Francisco Gas stock were made at \$65.50 per share; State Telegraph Co. at \$32, and Spring Valley Water at \$67.50. A few shares of California Steam Nav. Co. sold at 72  $\frac{3}{4}$  ct., and thirty shares National Ins. Co. at \$70.50  $\frac{3}{4}$  share.

The receipts of the local insurance companies and the city railroads during the first four months of 1867, have been as follows, according to the returns made to the Internal Revenue Department:

INSURANCE COMPANIES.	April.	Previously this year.	Total.
Pacific Union.....	\$54,303	\$156,575	\$210,878
National.....	33,704	19,227	52,931
Pierman's Fund.....	13,941	41,478	55,419
Builders.....	12,125	25,531	37,656
California.....	11,371	29,630	41,001
Merchants' Mutual Marine.....	9,851	44,364	54,215
Occidental.....	7,814	17,076	24,890
Home Mutual.....	7,352	23,433	30,785
San Francisco.....	5,844	13,015	18,859
Totals.....	\$177,936	\$496,417	\$674,403

CITY RAILROADS.	April.	Previously this year.	Total.
Omnibus.....	\$20,898	\$57,774	\$78,602
North Beach and Mission.....	18,283	50,726	69,014
Central.....	11,777	31,553	43,340
Front St. N. and Ocean.....	6,393	14,928	21,321
Market Street.....	8,136	13,959	22,095
Totals.....	\$55,412	\$168,950	\$224,362

The above returns were made in currency, which ranged from 73  $\frac{1}{4}$  to 75 cents.

The Stock and Exchange Board have made arrangements to hold their meetings in their new rooms, in the Merchants' Exchange building, on California street, on the first of June. They will be the first organization to transact business in that magnificent structure.

## MINING SHARE MARKET.

The mining share market continues to be characterized by large transactions in the various claims at present on the list of the Board. Most shares have sold at an advance over our quotations of last week, and greater firmness prevails in this class of securities than for some time past.

SAVAGE—has been in the market to a limited extent at enhanced rates, it is held with great firmness, advancing from \$3,500 to \$3,700, and at the close \$3,750 was bid. The Superintendent's report states that 2,326 tons of ore were extracted during the week ending May 18th, the approximate value of which is given at \$96,596, or \$41.57 per ton. The ore worked during the previous week yielded \$42.22 per ton. This ore came from the following points—Upper stations, including sixth, 126 tons; seventh level, north mine, 1,184 tons; middle mine, 639 tons, and south mine, 377 tons. Recent explorations in the upper portion of this mine have developed a seam of ore above the old second level on the east side, which is reported to be some five ft. wide and of good quality. This ground has been worked over and around so often that it is impossible to tell how far it may extend. The drift run due west from the E street shaft, at a distance of 360 feet—which is about the center of the claim—developed a very important body of ore, and it is believed that when the eighth level is developed, it will be found to extend throughout the entire length of the claim. The shaft has been completed to a sufficient depth to open another station, which will be the ninth or fourth from the E street shaft. We must commend the very full reports this company receives every week from its manager at the mine, and take this opportunity to recommend a similar course to several other prominent claims on the list of the Board.

HALE & NORCROSS—has been offered at \$3,500 during the past week. The average yield of this company's ore up to the 19th inst., has been \$42.60 per ton, with a gradual improvement toward the close. From the 1st to the 19th inst., 2,167 tons of ore were delivered to the mills, 65 per cent. of which, being the amount obtained from the mills, shows a yield of \$92,300. Every portion of the mine is said to look well. On the 16th inst., the shaft had attained a

depth of 346 feet, and was timbered throughout.

YELLOW JACKET—has been in favor, with small sales at an advance, rising from \$1,725 to \$1,835, receding to \$1,800@1,775, then selling at \$1,800@1,785, and closing at \$1,770. From the 1st to the 13th inst., this company's mine produced 2,712 tons of ore, showing an assay value of \$37.00 per ton. During the same period the bullion returns amounted to \$66,311.36. At the close of April, this company had a cash balance of \$100,596 over all liabilities.

CROWN POINT—receded from \$1,725 to \$1,640, gradually advanced to \$1,750, and closed at \$1,750. In drifting south, on the east body of ore, on the 500 foot level, the developments are said to look better than they did two weeks ago. The west drift, on the same level, is now in 130 feet, running in hard blasting rock. On the 17th inst., the shaft had been sunk 24 feet towards the 600 foot station.

CHOLLAR POROSI—has been in considerable favor, improving from \$600 to \$645, declining to \$580, rallying to \$613, and closing at \$605. We are informed that in the south end of the Blue Wing level the ore has made a turn to the southwest, where the seam is said to be eight or nine feet wide, carrying good ore. The middle winze of the Santa Fe level, at the close of last week, had been sunk to a depth of about 90 feet; it is still in ore, but not of so good a quality as formerly. The ore sent to custom mills during the week ending May 18th, aggregated 3,355 tons. This company now employs 325 men at the mine. It is believed that the bullion receipts for the present will exceed those of last month.

GOULD & CURRY—advanced from \$575 to \$660, receded to \$600, dropped to \$525, and at the close was selling at \$580.

OPHIR—has been exceedingly active, nearly 600 feet having changed hands during the past week, opening at \$337.50, advancing to \$425, receding to \$350, rallying to \$380, falling to \$345 under heavy sales, and closing yesterday at \$395. On the tenth station drift south the ledge has been cut, which proved to be very narrow. The drift has been continued north about twenty feet, and it is said that several days ago a ledge five feet wide was developed. The "up-raise" has not yet been opened. In the north drift, same level, water and patches of quartz have been encountered.

IMPERIAL—is in better favor, gradually improving from \$192 to \$217.50, then selling at \$212.50, and at the close realizing \$192.50. The receipts of bullion during the first half of the current month amounted to \$25,488. The ore sent to the mills during the same period aggregated 2,412 tons, and a surplus of about 1,000 tons remains at the dump of the Alta mine. KENTUCK advanced from \$210 to \$350.

ALPHA—sold at \$400@405....BELCHER realized \$396@410, closing yesterday at \$415....EMPIRE declined from \$170 to \$165, advanced to \$172, and at the close \$170 was bid....GOLD HILL Q. M. & M. Co. sold at \$175@167.50.

CONFIDENCE—declined from \$67.50 to \$50, assessment of \$10 delinquent on 23d instant, and closed at \$55 bid. The 410-foot level has been opened north and south about sixty feet, and it is said that the ore is seven feet wide, showing an average assay value of from \$50 to \$110 per ton. This new development, it is thought, will produce enough ore for a five or six months' run....OVERMAN advanced from \$43 to \$80, and at the close sold at \$70....BULLION receded from \$40 to \$30, and closed at \$35.

DANEY—sold at \$25@27. Advices to the 11th inst. state that this company, in its old mine, at a depth of 150 feet, are taking out considerable ore, which, it is thought, will give a fair profit over mill expenses. The company's mill commenced running on this rock soon after the above date, and it is believed that the present supply is sufficient for a two months' run.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,703,957.

## Allen's Lung Balsam.

Remarkable cure of the daughter of Robert Lawrence, Esq.:

New York, Ky., June 1, 1867.—Gents:—I will give you a statement of the wonderful medicinal properties of ALLEN'S LUNG BALSAM. My daughter was attacked with a cold, which settled on her lungs. A severe cough was the consequence, which so harassed her that she became much reduced. She had great pains in her side and breast, attended with cold chills and night sweats. She raised more than a pint of matter a day. Finally her lungs became ulcerated; her hands and feet were cold and clammy as death. Her physician, having failed to give any permanent relief, said that he could not do anything more for her; that she must soon die. At this time I procured Allen's Lung Balsam, which caused her to raise large quantities of matter and phlegm. When this was expectorated, her appetite and strength gained rapidly, and her cough in a short time ceased; and now she is a most extraordinary trophy of the medicinal properties of Allen's Lung Balsam.

Respectfully yours,  
ROBERT LAWRENCE.  
Be sure you call for Allen's Lung Balsam. Price One Dollar per bottle.  
Sold by all Medicine dealers everywhere. 1814-1m







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Alpine Miner* of May 18th: The editor saw a specimen of ore from a lode in this county, and asserts that, from the quality and quantity now in sight, it is equal to the Comstock, adding: We are not at liberty to point out the mine; but that the ore vein is six ft. thick—the whole, milling rock—and that it is not of a character to admit of its being a continuation of the Tarshish.

The Schenectady Co. is working eight men on the Tarshish, the number to be increased as soon as the ore house is finished. The ledge is opened some 31 ft. from the east wall, and no sign of being through yet. From present appearances, the lode will be to us what the Comstock is to Washoe. After running a tunnel in 500 ft., a large body of ore was struck, from 3½ tons of which a bar was obtained ten inches long by four deep and four broad, weighs \$39.80 ozs. troy, is 16-1000 fine in gold and \$53 in silver, and contains of the former \$277.74, of the latter \$926.18, or a total value of \$1,203.82. Two small bars, valued at about \$20, were run from the melted mass besides, so the actual yield per ton was a little over \$350.

The workmen on the Riuggold & Goldfinch tunnel have struck water, and a body of quartz of the same character as that in the Tarshish.

The owners of the Diamond claim have, in the last 12 days, made .58 ft. of tunnel 5 by 7 ft., averaging 4 ft. 10 in. per day.

## Calaveras County.

From the *Chronicle* of May 18th: Mining in the vicinity of Mokelumne Hill is very brisk. Hadlock & Brown are busily engaged in taking out ore at the rate of \$20 per day to the man.

Adams & Mitchell are working near French Hill with good success. They are employing a number of hands. The claim is giving a good account of itself. Smith & Peek, who have been prospecting the gulch near the soda factory, recently struck gravel which prospects finely. Labor has been resumed on the numerous quartz ledges in this vicinity, and the present season will see a number of mills erected.

A piece of gold weighing \$11 was picked up by N. B. Jenks, at Cat Camp, a few days ago.

## El Dorado County.

From the *Mountain Democrat*, May 18th: The Williams Co., at Rattlesnake Bar, have struck it rich—have a second Hayward mine. The ledge is what is called a sulphuret vein. At the depth of 28 ft. the vein is 6½ ft. wide, and the ore averages \$96 a ton. Out of three tons of rock we get one ton of sulphurets, and the latter are remarkably rich. Parties who have examined the ledge state it is one of the best in the State.

We have a number of quartz ledges in our neighborhood that only need development to make them pay handsomely. The Epley Q. Co. have one of the best claims in the State. The vein is from 2 to 3 ft. wide at the depth of 65 ft. They crushed this week 30 tons of rock at the Harmon mill, and the return was \$1,523 free gold, and the sulphurets paid \$50 to the ton. It was not picked rock, but taken indiscriminately from the ledge.

## Humboldt County.

From the *Yreka Journal* we learn that there is some excitement along the Sacramento river road concerning a report of rich diggings having been discovered in the Pitt River Valley, by parties from Red Bluff and Shasta.

## Mariposa County.

From *Gazette*, May 18th: The proprietors of the Potts mine are preparing to erect a ten-stamp mill in Hunter's Valley, to supersede the old Floyd mill. The entire machinery is now being constructed in San Francisco, and will be of the first-class, comprising all the latest improvements in quartz crushing, amalgamating, etc.

## Nevada County.

From the *Grass Valley Union*, May 12th: The Union Jack mine has been turning out very well during the week.

From same of 15th: Robinson, Butterworth and other capitalists of San Francisco, who last year purchased extensive gravel diggings at Humburg, in Bloomfield township, design the present season to construct a ditch from either the South or Middle Yuba, to carry water to their mining ground. The ditch will be 20 miles in length. Robinson & Co. have secured a water right in both of the Yubas, from the ditch companies who have original right to the waters.

Same of 16th: The W. H. Hoopers mill is crushing rock for the Gold Hill mine. About 1,500 tons of quartz from this mine have been crushed the present year at this mill. Two batteries, of five stamps each, will be employed on ore from the Diamond mine, the balance of this month. For the 13 months ending Jan. 1st, 1867, the Gold Hill mill crushed 2,500 loads of custom rock, yielding \$70,000.

Same of 17th: A portion of the hoisting and pumping machinery for the La Crosse mine, in Rhode Island Ravine, near Grass Valley, has been delivered at the mine, and the balance will be delivered in a few days.

From the *Grass Valley National* of May 16th: More mining will be carried on this summer and fall, along the river above and below Washington, at Rocky Bar, Jefferson, Brandy Flat, and other places, than has been done in any season in the past five years.

Same of 20th: The Lady Franklin mill, at Boston Ravine, has been leased by Southern & Cracklin, for one year, and is now crushing at the rate of 25 tons of rock per day. Rock from the Day ledge, on Spring Hill, is being crushed. This mill will be entirely devoted to custom work.

From the *Gazette*, May 18th: R. C. Black cleaned up in his hydraulic claims, after a ten day's run, and took out \$2,600. The French Co. have completed the survey of their ditch from Cañon Creek to Humburg, and make the whole distance 36 miles.

Same of 21st: An ancient channel has been discovered at Rocky Bar. The claims have been located by Dillou and others.

J. S. Spring & Co. have commenced work on the Mary Etta ledge, near Omega. They are sinking an incline 200 ft. south of the old shaft. The ledge is five feet wide and the rock richer than that taken out of the shaft last year.

The quartz mill of Black & Young, near Eureka, is now running regularly; their ledge is 3½ ft. wide. The last crushing yielded \$15 per ton. The Enterprise has been opened 55 ft., rock exceedingly rich.

From the *Transcript*, May 18th: Sanford & Co. have located 25,000 ft. in the bed of Greenhorn Creek. They intend to work the tailings through a flume 24 ft. wide. Headcock and others have located a quartz ledge between Orleans and Moore's Flat. Rock yielded \$40 to \$50 per ton. Buck & Co. have located the extension.

Same of 27th: Three tons of rock from the Monadnock ledge, yielded \$72. Prospects of miners at Sailor Flat and Blue Tent are excellent at present. The Banner Co., after a week's run under four stamps at Stile's mill, cleaned up 270 ozs. amalgam. The Ural Co. from 150 tons of ore crushed, cleaned up \$3,500; nine tons of sulphurets, separated from the pulp, sold for \$90. They have a 4-ft. vein, with 100 ft. back.

EXCELSIOR.—The Golden Eagle Co. have struck a strata of ore, at a depth of 10 ft., that shows a large amount of free gold. The Gold Run Co. have taken out some very rich sulphurets. Several mills are in operation at Meadow Lake. The Mohawk & Montreal, California, Grant and others are taking out ore for crushing.

From the *Meadow Lake Sun*, May 18th: A piece of rock from the Golden Eagle Co.'s claim, nearly one-fourth pure gold is to be sent to Virginia City for exhibition. The Reduction have increased their capital stock to \$30,000, and have levied an assessment of \$2.50 per share. The Live Oak Co., Pine Tree ledge, have taken out some ore, which shows considerable free gold.

## Placer County.

From the *Placer Herald* of May 18th:—The Last Chance Co., owned by Lawler, Tyler & Co., struck it rich last week, almost as much so as the Green Emigrant. The owners believe they have a fortune. The Savage and Mexico Quartz Co's, who combined to sink a shaft on the division line, at the depth of 12 ft., struck a ledge 21-2 ft. thick.

From the *Auburn Stars and Stripes* of May 15th:—The Green Emigrant still yields in undiminished volume. There is a rumor that a discovery has been made near town, richer than the Green Emigrant.

From the *Dutch Flat Enquirer*, May 18th: The King Bros expected to start up their Cement Mill on the 18th, they have a large pile of cement, ready to crush.

## Plumas County.

From the *Plumas National*, of May 11th: Twenty tons of rock taken from the Kitts Ledge, near Greenville, lately yielded, when crushed, the sum of \$500.

A number of new claims have been located on Mill Creek, the past week.

Last week, the water-shaft in Sherman & Co.'s mill, at Argentine, broke, causing a delay of operations for three days. The mine is paying well.

The Mammoth ledge, Eureka Mills, has prospected immensely rich lately.

## Shasta County.

From the *Courier* of May 18th: Two men recently rocked out \$80 in two days in a gulch near Farrington's saw mill, on Brandy creek. There are many such spots in that neighborhood.

A vein of exceeding rich rock has been struck in the Chicago claim, at South Fork, 72 ft. below the surface.

The conditional purchasers of the Crystal mine, at South Fork, have relinquished the claim to the original owners. The rock prospects splendidly, and the lode has every appearance of permanency.

## Sierra County.

From the *Downieville Messenger* of May 18th: The Monumental Co., at Potosi, while running a tunnel, a short time since, had a cave from overhead, which proved to be on the lead. A few ear loads of the dirt paid \$176.

The Boot Jack Co., at Gibsonville, washed out \$1,000 in one day, using only 30 inches of water.

## Trinity County.

From the *Shasta Courier* of May 18th: Several rich mining claims have been located on the divide between the head of Dog Creek and Hall's Gulch. One man made \$6 per day during the last month, and packed his gravel a distance of half a mile in a flour sack to get water to pan it out.

## Yuba County.

From the *Sutter Banner* of May 18th: Last week, the Blue Guard claim, at Smartsville, cleaned up \$75,000 after a run of 30 days.

From the *North Californian* of May 20th: A piece of white quartz, very rich studded with gold, was shown us this morning by Mr. Dufficy. A ton of it would be worth about \$10,000; and we wanted to know where the lead is, but he thinks he's got a big thing, and keeps mum.

From the *Marysville Appeal* of May 19th: The quartz now taken from the Rattlesnake is still richer than that in the Pennsylvania claim. The ledge, so far, is only three feet thick.

A Frenchman from Grass Valley is now employed to save the sulphurets for the Jefferson and Pennsylvania companies. The companies are crushing good quartz.

## ARIZONA.

From the *Miner* of May 4th: The new Vulture mill is in active operation, crushing 18 tons a day; as yet all of the stamps have been worked but a part of the time. The engine is the best yet put up in the Territory. It was built by H. J. Booth & Co., of the Union Foundry, San Francisco, and is of 50-horse power. It has all the new improvements. The Vulture mine is 14 miles from the mill on the Hassayampa, one mile north of Wickenburg. The claim consists of 300 ft., the original discovery claim of Henry Wickenburg. There are two shafts each 90 ft. in, showing a large vein of pay rock. The quantity of surface rock is very great. Two thousand tons are now ready for the mill. Lager & Co., of Fort Yuma, have the contract for hauling at \$10 per ton; they carry 30 tons per day. The ore worked to this time shows few sulphurets, and has averaged \$50 per ton. The gold bars pass at the rate of \$17 per oz. A large amount of bullion, from the Moss lode, arrived in San Bernardino from Hardyville, en route to San Francisco.

## COLORADO.

From the *Times* of April 30th: The deepest shaft of the Gunnell lode is 512 ft. in. It is at present in one of its fitful humors, and does not yield its usual proportion of treasure. A gang of men are working the Empire lode; they are 35 ft. in. The lead is six inches wide. Some of the citizens are pitching into the I.X.L. on their own account. The shaft is 40 ft. deep, with a crevice of 15 in. solid iron. Messrs. Lyon & Co. are working on the Pewabic lode. They have an engine over the shaft and are getting out ore merrily. The shaft is about 90 ft. deep, and the crevice between seven and nine feet wide. It is filled with soft copper pyrites mixed with magnesia, and is worked almost as easily as if a dirt crevice. Messrs. Zeyner & Briggs are at work on the Kingston lode. It is opened out for 400 ft.

Two assays of the Franklin lode by Mains & Hutchinson, were as follows: One, per ton in silver, \$322.92; the other, per ton, in silver, \$388.18. Just below the Franklin is the Waterloo. The galena near it appears rich. Many tons have been smelted in Lyon & Co's furnace. It assayed per ton, gold, \$198.42; silver, \$4.13.

The Ayres lode has developed a seam eight inches wide. The superintendent feels sure of soon striking the main crevice several feet wide. The tunnel is in 126 ft., and is 130 ft. higher up the mountain than the Ayres. The elevation at this point is 112 ft. The mammoth smelting works of the Con-

solidated Gregory Co's, late J. E. Lyons & Co's, are again at work.

On Clear Creek, the miners are doing well. Capt. Dean, from six buckets of dirt, washed out three-quarters of an ounce of coarse gold. The Grass Valley Gold Mining Co. will soon commence work on Montgomery Bar.

Some Frenchmen below Idaho are making four to six pennyweights per day to the man. The ground was worked over once or twice before, in '61 and '62.

Prof. Schirmer's assay of the matt from Grey's furnace in James Creek Dist., yielded \$405.36 per ton. No copper assay has been made. The Prof. thinks that the matt from the Pitman lode will yield 60 per cent. copper. Three hundred and twelve feet on the Illinois lode, with the 12-stamp mill and appurtenances, in Illinois Central Dist., Gilpin county, was sold to the North Star Gold and Silver Mining Co. by H. C. Bullard, for \$40,000. Henry Briggs sold sundry claims in Gilpin county, to the Birmingham Gold Mining Co., for \$12,000; also 200 ft. on the African lode, Quartz Valley Dist., for \$9,000. Messrs. R. H. Berryman, J. F. Spaulding, S. V. T. Thompson, and N. H. Warren sold 700 ft. on the Oro Cache lode, Phoenix Dist., to H. K. Horton and others of Mass. and N. H. for \$25,000.

From the *Register*, April 28th: A silver bar was on exhibition at the Rocky Mountain National Bank. Its weight was 62.15 ozs., and is valued, in coin, at \$85.30. It was taken from 1,200 lbs. of Baker ore, by Messrs. Reese & Co's process.

Judge Morse has sunk his shaft on the Pendleton lode 130 ft.

Mr. Babb has begun work on the Raymond lode, in the old Martin shaft, which has been deserted since 1862. The shaft is 160 ft. deep. The work is being done in a drift near the surface. The vein is narrow, but very rich. The Quartz Hill tunnel is 233 ft. in length.

## IDAHO.

From the *Owyhee Avalanche* of May 4th: The snow is becoming rotten in Owyhee and will soon be gone. Two companies, organized in Iowa, have their agents on the ground in Flint Dist. The Forrest lode is represented immensely rich in silver. An 80-ft. shaft has been sunk on the Silver Cord lead, and the vein will soon be in good working condition. The work of taking out and milling ore from the New York lead has already commenced. The Hays & Ray tunnel is now extended 600 ft., and will reach the Poorman about the first of June, and the mine will be in condition by that time to supply 100 stamps with ore for crushing. The Rising Star, in Flint Dist., is yielding richer ore than ever. The Oro Fino mine will soon be in condition for working again.

Beachy's stage line regularly brings full loads of passengers to the northern mines. The destination of most of them is Lemhi. The War Eagle mines are undoubtedly rich. Great reduction has been made in the price of freighting ores from the mines to the mills, from \$6 of last year to \$3 of this year. The Chinamen are doing an active business in the placers of Owyhee. There is a prospect of again working the Allison lead. A prospecting party have gone into the Goose Creek mountains.

From the *World* of May 4th: After a two weeks' run at the quartz mill of the Elk Horn Co., the product from 100 tons of ore was 607 ozs.; the assay yielded \$8,300. There are 600 tons more of the same quality ready to crush. The mine is six miles from Pioneer City, and is the best quartz mine in Boise county. The mill is driven by water supplied by a ditch owned by the company, and runs five stamps. The main tunnel in the Elk Horn vein is 400 ft. deep, and the ledge averages two ft. The ledge was struck 104 ft. below the upper tunnel last fall, and another tunnel 380 ft. deep has been pierced which develops a continuous vein of three ft. width, in which blue sulphurets abound.

A miners' meeting at Centreville, April 25th, resolved that all ground vacated or worked out shall be a dump, without redress for damages, and that no miner or miners shall be prohibited from dumping on said ground, and in case of dispute to be settled by action of the miners.

From the *Lewiston Journal* of May 3d: Snow in Warren's Basin is about two feet deep. A few miners had commenced washing; D. Moore & Co. were about to commence. Bill George had been working for about two weeks. The Irish Co. just below town were all ready to commence. Several companies had been drifting all winter. B. Haymond & Co's tunnel had been completed. Sanderson & Bemis were to commence work this week.

Good diggings had been found six miles below Faust's ranch on South Salmon. Mining had been conducted with good success on south fork, about 30 miles above



Fausts', all winter. Some new and rich discoveries of quartz, both gold and silver, had been made on the east side of the south fork. It is claimed to be as rich as the float rock found near the W. P. Hunt lead.

Work had been resumed on the tunnel of the Liddle & Harper at Florence, and the vein of ore was near at hand. The French creek ferry is in full blast.

#### MONTANA.

From the *Helena Gazette*, May 4th: The Black Prince, Harrah, Cannon, Sioux Chief, W. A. Allen and Swansea silver leads, located last fall and winter in Ten Mile Dist. are all No. 1 leads. The Henry Allen, a gold ledge, has a width of 38 ft. Any piece of gold taken from the ledge will prospect handsomely. Assay of the Black Prince yielded traces of gold, and \$92 silver per ton, while the Cannon showed, gold \$28, silver, \$66 per ton. None of the leads are sunk on more than 10 ft. Col. Allen and Billy Foster, old Colorado miners, were the discoverers. The Spanish lode has been prospected 25 ft. with a 4-ft. crevice. Amazon, 35 ft., with 10-ft. crevice; Paul Jones, 40 ft., 4-ft. crevice. The ore from these lodes contains abundance of metal.

The Copperopolis, J. J. Newland, and Desoto lodes, Muschell Dist., are represented by a quality of ore that approximates pure copper. The Newland is a lead recently discovered. In the furnace this ore melts down like lead ore, the slag being almost entirely consumed by a very low furnace temperature. The shaft on the level is down 35 ft. with a width of crevice of 2½ ft. From present indications this is likely to prove one of the best lodes in the district.

Five well defined lodes of great extent and richness, have been developed. The Muschell copper mines are on one of the main Indian trails to the Gallatin.

The mining ground at Lincoln Gulch is 12 miles northwest of McClellan, about eight miles long, and follows to the Big Blackfoot river. It was discovered last September, about one-third of the way up the gulch. The bedrock is a quartz ledge. Several claims were successfully worked last fall and winter. The pay streak is about 140 ft. wide and four or five feet thick, and on some claims pays from \$1 to \$10 to the ton. Above the discovery the streak is narrower than below, but the gold is coarser. Claim No. 8 yielded last fall, in a few weeks, \$18,000. It has been let out on shares. A rich bar has been discovered in the vicinity and shares are as high as \$2,800. On claims Nos. 12 and 13 the pay streak seem to be divided. The gulch has been prospected to No. 36 below discovery, and is considered very rich generally.

A contract has been let by the Water Ditch Co., to run a flume across Last Chance Gulch, by which water will be supplied to Dry Gulch and others east of Helena—contract to be finished in less than a month.

From the *Helena Herald*: Gold placers have been discovered on Vermillion Creek, about half way between lakes Flathead and Pend Oreille. A silver lutton weighing 120 lbs., valued at \$1,956, was taken from the Argenta mine. It is circular in form, about 30 in. in diameter and 1½ in. thick, was the product of 7½ tons of ore, cupelled in 25 hours. The ore from the Oro Cache yields \$100 per ton. On the Black lode two shafts have been sunk 50 and 75 ft. respectively, showing a vein of seven feet of pure quartz, yielding \$360 per ton, gold. Sufficient work has been done on the Wayne & Upania lode to demonstrate their permanence and richness in silver ore.

Weekly, large cakes of silver are transmitted to the banking house of Nolan & Weary, from the Essler silver mines. The last lutton weighed 180 lbs.

#### NEVADA.

From the *Enterprise*, May 16th: A bar of gold extracted from Midas ore at the Wheeler mill, weighed 21.92 ozs.; value, \$411.72. The gold is .917 fine, or worth \$18.96 per oz. The Pioneer mill is crushing ore from the Wilson lead. The Penrod is crushing ore from the Midas, and the Wheeler astrata mill is crushing ore from the Sentinel. The Wilson lower tunnel is in 420 ft. Nearly every piece of rock taken out, shows free gold, and their dump presents the appearance of a huge pile of specimens. The Wheelers are hoisting rich ore from their old shaft. The Imperial Co. struck their ledge in a shaft 50 ft. from the surface, and have drifted 12 ft. without getting through.

The Reese River and Hamilton claims, are promising well. A cut across the Vanderbilt ledge, seven feet deep, shows it to be by actual measurement, 47 ft. in width. A shaft has been sunk 50 ft., and at that depth, the ore assays, silver, \$27, gold, \$7 per ton. Work will begin on the Bina and Congress ledges as soon as the necessary machinery arrives.

The Bewley is one of the most promising claims in the district. An incline 6x10 is being sunk; it is now down about 60 ft. The claim has produced 400 tons of ore, which is now at the dump. Some parties at Gold Hill have made arrangements to open and develop the New York ledge.

#### MINNESOTA.

From the *Register* of May 11th: The Golconda is a better mine than heretofore reported. There are thousands of tons of ore in sight. The last 14 tons worked at Holt's mill, yielded \$1,300. Work on the mine is now suspended, from the fact that four hands can take out ore enough to keep several mills running. Three men in two days took out of the Cumberland lead 20 tons of ore. If this mine will yield \$30 or \$40 per ton, it is a handsome thing. The Rochester Co. expect to begin work in a couple of weeks.

#### MINNESOTA.

From the *Territorial Enterprise*, May 18th: The principal claim worked at present is the Illinois on Silver Mountain, located nearly in the center of the district. It is being opened by a shaft and four tunnels. The outcrops of this lode are very prominent, rising on the west of Silver Mountain 15 ft. above the ground and 25 ft. wide. One tunnel will tap the lead about 75 ft. below the croppings; another will strike the lead 100 ft. below; the third about 300 ft. below; a fourth tunnel is started still lower down on the north side. The shaft shows good mineral 10 ft. wide.

The superintendent of the Sand Springs salt mine, expects to sell \$100,000 worth of salt this year—which will be an improvement of 25 per cent. on last year's sales.

#### MISSOURI.

From the *Silver Bend Reporter* of May 11th: All of the bullion shipped from Silver Bend is at present produced by the mill of the Belmont Co. from ore taken from the Transylvania ledge. Work is continued upon the Highbridge ledge, but no ore has been reduced for the past month.

The shaft on the Highbridge is now down 125 ft., and indications are that it is close upon the lode. Three hundred and thirty tons of ore were reduced, which produced \$17,000.

Upon the Transylvania, an incline is now down 55 ft. below where the ore that is milled is taken. In this incline the lode preserves its uniformity and evenness, pitching at an angle of about 75 degrees, and maintaining a width of about eight ft. The mill has netted from the Transylvania ore, during the month of April, a clear profit of at least \$5,000.

The Belmont Co. are sinking an incline upon the El Dorado, which is down 65 ft., with flattering prospects.

Work will shortly be resumed upon the McDonald claim, in Ophir Cañon. The McDonald Co. own the first southern extension of the Murphy ledge, and already have a shaft sunk to a considerable depth upon it, but a few yards distant from the opening upon the original Murphy mine.

A vein of exceedingly rich ore was discovered, a few days since, by A. W. Simonson, northwest of the Arizona and within a short distance of that mine. Specimens from it show a plentiful amount of horn silver. A shaft has been commenced that is now down about four ft. The width of the vein is about 14 inches. It has been stripped along the surface for about 300 ft., and found to maintain a uniformity of width throughout, while the ore is of equal richness.

The Rutland mill is still idle. Large lots of ore from the claims of the Bullion, Davis and Emersley Co's are now on the way to Austin for reduction. Work is progressing upon the Indian Jim, Gazelle, Keystone, Alta and Clipper ledges. The shaft upon the Indian Jim is still continued, and there has been considerable ore taken from it that is estimated will work \$800 per ton. Upon the Keystone and Gazelle there are 14 men employed. A tunnel has been run, which, at the distance of 40 ft., cuts the former lode at a considerable depth, striking a stratum of ore three ft. thick, 18 inches of which is of a high grade. The Gazelle has been worked by a cut now 80 ft. into the hill, a prominent and well defined vein disclosed of six ft., and the ore is of remarkable richness. Six tons have just been shipped to Austin for reduction, and there are 80 tons more lying upon the dumps of an estimated average of \$200 per ton.

The owners of the Alta have been at work now about ten days, and it promises well. The Clipper ledge has a shaft to the depth of 78 ft. At the surface, the lode is about 1½ ft. thick, but it gradually increases, and at the bottom of the shaft is 3½ ft. The ore is not of a high grade, being estimated to work from \$60 to \$100 per ton, though at the bottom of the shaft ore is procured as

saying much greater. The Chieftain and Niagara lodes have been worked to a slight extent, promising well. Preparations are now making to commence operations upon them. The mill at Hot Creek is still idle.

Work has been done on the J. K. Fisher, Tonton and Germania lodes, at Milk Springs, with the best results. The Empire, Danville, Hot Creek and Reveille lodes develop very rich ore on the surface. An excavation 20 ft. deep has been made on the Fisher, in which one of the walls was di-closed, and the same thing occurred in a similar cut between the Teuton and Germania.

From the *Reveille* of May 15th: Two and a half tons of ore from the Westfield ledge, in the Reveille Dist., yielded as follows: The first lot of 3,000 pounds at the rate of \$600, and the second lot of one ton at the rate of \$550 per ton. Both lots were worked at the Keystone mill.

The new stack for the furnaces of the Manhattan mill, which is being built by McGinnis & Cozzens, will be 64 ft. high, 8 ft. 4 in. at the base, and nearly 4 ft. at the top. The stack will be square, and, excepting the foundation, will be built of brick.

A certificate of assay by David Lundhom, of pulp from the Silver Chamber, was well up in the figures. The pulp of the first-class chloride ore, of which one ton was worked at the mill, was \$933.09; of the second-class, of which one ton was also worked, was \$157.08.

From the *Trepass* of May 15th: Since the last two weeks the machinery at the Confidence lead has been thoroughly overhauled and everything put in order for sinking the shaft to an additional depth of 275 feet, or a total depth of 850 ft., with levels opened at each 20 ft. While this work is progressing, ore from the old chambers to the amount of 50 tons per day will be taken out, which will mill \$30 per ton. The Co., since its organization, has extracted bullion to the value of \$750,000, yet the returns do not decrease.

But little work has been done in the Danville Dist. during the winter. There is a prospect of work being soon commenced. Work will be resumed on the Northumberland ledge soon.

Same of May 18th: Work is being vigorously prosecuted on the Highbridge, Combination and Transylvania Co's. All are engaged in sinking shafts and running tunnels. The Belmont Co. intend to increase the capacity of their mill to 24 stamps. The Combination Co. propose to erect a 40-stamp mill. It is expected to be in operation by Fall. The Pennsylvania Co. also propose putting up a 24-stamp mill, which will make 84 stamps upon ore from these three companies.

#### WASHOE.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the *Territorial Enterprise*, May 16th: Copper smelting is about to be commenced in Peavine Dist. Two of Haskell's patent furnaces are on the way.

From the *Transcript*, May 17th: It is generally believed that the Savage mine will go up to old Gould & Curry figures—\$6,000 a foot. A dividend of \$200 per foot is confidently expected for the month of June.

From the *Trepass*, May 16th: Mr. Negus, of the American Basin Co., has let a contract for the continuation of the tunnel in that claim. He has just returned, from San Francisco, where he purchased a mill of 16 tons capacity, for the Golconda. All the mills in Storey, Ormsby, Lyon and Washoe counties are at work, with plenty of ore for many months to come.

From the *Gold Hill News* of May 15th: Water is increasing in the tunnel of the Cole mine. The tunnel is 1,700 ft. in length, and the work of drifting for the ledge is being vigorously prosecuted, with flattering indications of cutting a rich body of ore soon.

From the *Enterprise* of May 18th: The Crown Point Co. have just completed a fine dump provided with all the late improvements for loading teams. Their stone sewer eight feet in width and 200 in length, is finished, a road is being built over it.

Wells, Fargo & Co. shipped during the past week, 8,169 lbs. of bullion, valued at \$199,226.14; from their office in Gold Hill, 6,494 lbs., valued at \$133,953.23.

#### OREGON.

From the *Dalles Mountaineer*, April 28th: Considerable excitement exists at the Dalles and Cañon City, about the new diggings just discovered on the John Day and Crooked rivers.

From a private letter published in the *Times* of this city, we learn that the Yaquina coal mines are very extensive. There is at least 1,000 acres of coal deposit. Along Yaquina Creek, pieces of coal weighing over 100 lbs. are found. Facilities for conveying

this coal to the place of transportation are unusually great, the distance to navigable water is five miles, over a level plain or bottom. A railroad has been constructed at a small outlay, and coal placed alongside the vessel at a cost of \$2 per ton.

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## Mining and Scientific Press.

W. B. EWER,..... SENIOR EDITOR.

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## Canvassing Agents.

**Mr. A. C. Knox**, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office, Jan. 11, 1866.  
**Mr. L. W. Felton**, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1866.  
**Mr. E. L. Smith**, is a duly authorized Agent for this paper, February 23, 1867.  
**Mr. J. M. Kennedy** is an authorized agent for this paper, in the counties of Santa Clara and Santa Cruz.

## San Francisco:

Saturday Morning, May 25, 1867.

## Notices to Correspondents.

FENTIAN is right. Chenevix was no more a Frenchman, notwithstanding his French name, than the numerous descendants of many existing Irish families who possess French patronymics, as instances of which may be given the names of Roche, Power (Le Poer), Burke (De Boreg), etc., etc. Chenevix was an Irish gentleman who happened to be in Paris during the Robespierian reign of terror, and was thrown into prison. This fact has perhaps tended further to confirm your Gallic opponent in the opinion that Chenevix was a Frenchman. This occurred at the time when the cry raged that "the nation did not need chemists and philosophers." Chenevix was placed in the same apartment with the illustrious Lavoisier and other talented chemists, who constantly kept amusing themselves by debating chemical topics. Chenevix thus became infected with a desire to learn the science, and immediately on being liberated, began to study chemistry with great energy, and soon distinguished himself as an analytic chemist. His analyses of corundum and sapphire, and his observations on the affinity between magnesia and silica, are very valuable, and led to considerable improvement in the method of analysis. In fact, Chenevix was for several years a most laborious and meritorious chemical experimenter. Unfortunately, owing to a mistake which he fell into respecting palladium, he entirely abandoned chemistry. The history of this error forms a curious episode in chemistry. It is, however, too lengthy for our columns this week.

CONRAD.—Blue rock salt is occasionally found chiefly, if not solely, in the Austrian provinces. It occurs of all shades, from that of a rich sapphire blue to the merest cerulean tint, in some cases graduating from the first to the latter until the color entirely disappears in the colorless crystal. We are not aware that any satisfactory explanation has ever been yet given for the phenomenon, and we certainly shall refrain from giving any theory of our own, seeing that it evaded the research of the celebrated Sir H. Davy, as will be gathered from the following extract from one of his letters: "I found a great deal of inflammable air in the great salt mine at Helstedt. The salt, like the quicksilver here, is in hituminous schist. The inflammable air is found in largest quantities where the blue salt is. I have again been searching in vain for the cause of this extraordinary color." Whilst writing the preceding, it has occurred to us as not being very improbable from the conditions accompanying rock salt, as above described, that the blue color may arise from the formation of some natural compounds of aniline.

**RAILROAD IN NEVADA.**—Incorporation papers were filed in the office of the Secretary of the State of Nevada, for the organization of a company to build a railroad from the Truckee, some five or six miles below Stone & Gates' Crossing to Virginia. Bolton, Barron & Co., and the Bank of California will furnish the capital. The road will be about 17 miles in length, and its estimated cost is \$750,000. The heaviest grade on the line will be 150 feet to the mile.

## Home Trades and Manufactures.

**CARPET BEATING MACHINERY.**—Messrs. J. Spaulding & Co., who, for the past year have been successfully engaged in cleaning carpets by machinery, have just completed a three-story building, forty by sixty feet, at No. 355 Tehama street, and provided the upper stories each with one of their carpet-beating machines and the necessary fixtures for conducting their business on a very extensive scale. As an evidence of this fact, about 8,000 yards of carpet from the Cosmopolitan Hotel has recently been hoisted by the machinery from the ground floor, in readiness to be put through the machine at the rate of about 500 yards at a run. From eight to sixteen breadths, fastened to canvas aprons, attached to rollers twenty feet in length, are wound and unwound, as occasion requires, and made to run the gauntlet of forty lashes per second from as many revolving rope whips, by which the carpets are cleaned from dust and grit without any damage to the fabric, and far more thoroughly and uniformly than by any of the manual operations hitherto employed for the purpose. The two machines in this establishment, together with the hoisting apparatus, are driven by a neat six-horse engine and hoiler of San Francisco manufacture, the former having been built by Geo. T. Pracy, Mission street, and the latter at the Neptune Iron Works. These works are said to be capable of cleaning 50,000 yards of carpet per month. The work is done at a cost of from five to ten cents per yard, the carpets being called for and delivered.

**HUNT'S WINDMILLS.**—Patented Aug. 19th, 1862.—These mills have continued to increase in favor. The self-regulating have nine sails, with a flange on the back of each, as a regulator, which holds back in proportion to the strength of the wind. A convenient brake is also attached to each mill, by which it can be stopped at any moment, and held at rest during the most violent storm.

The adjustable mills have twelve sails, which are turned edge to the wind when the brake is applied to stop the motion. By means of this same lever, placed at the foot of the mill, the sails are adjusted to any angle desired, so that the mill can be run with ease and perfect safety in any strength of wind, from the lightest breeze capable of imparting motion, to the heaviest gale.

A small illustration of these mills may be seen in our advertising department. Mr. Hunt is one of our most ingenious inventors, and has other patents yet to bring permanently before the public. For this reason, being of advanced age, he desires to interest some active parties in disposing of State and county rights. His shop, No. 28 Second street, is well worth a visit by those who take an interest in novel inventions.

**GOLDEN STATE POTTERY.**—We have had occasion, during the past week, to examine the large and varied assortment of earthenware at the depot of Messrs. Lobree & Co., 516 Commercial street, where we gleaned some facts as to the present status and future prospects of this comparatively new enterprise. The works of the Company are located at Antioch, Contra Costa county, in the vicinity of which an abundance of clay is found, not only for the different styles of earthenware to which they have hitherto given the most attention, but also of a kind suitable for every description of stoneware and the manufacture of fire-brick, some 20,000 of which article they are now using for the arches and lining of the new kiln they are erecting for burning their wares.

We understand that some of these bricks have been subjected to severe tests, which they have stood remarkably well. If they should prove, on a more thorough trial, to be equal to the imported article, as they are believed to be by the proprietors of these works, it will be a great acquisition to the coast, as they can be furnished at less than

one-third the cost of those from abroad.

In the manufacture of the stone and earthenwares, the clay is ground, washed and evaporated in shallow vats to the proper consistency to be shaped into the required form by the hands of the potter, aided by the necessary machinery, or pressed into molds of plaster of paris, as the case may be—the more beautiful designs for ornament being formed by the latter process—after which they are dried and burned in the furnace; the time and degree of heat varying according to the purpose for which the ware is intended.

Messrs. Newman & Brannan have ordered a ton of this clay for the San Francisco Glass Works, in order to give it a thorough test, the result of which will be of interest to smelters, foundrymen, and many others.

**CALIFORNIA TWEEDS.**—The woolen machinery, which we mentioned some time since as having been ordered by the Oakland Cotton Mills, has arrived, been put to running, and the cloth is now in the market for sale. The kind of cloth made is "tweed," similar to that of which tweed overcoats and ladies' cloaks are made—consisting of equal parts of wool and cotton. The cloth is fine and firm, and fully equal to the same class of goods imported from the East. It is said that it can be manufactured here cheaper than it can be imported. A new article of manufacture is thereby added to the rapidly increasing list of California-made goods. We are fast becoming independent of the Eastern market for everything, the raw material of which we can produce here.

**IMMENSE BOILERS.**—The largest boilers ever built on the Pacific coast have been turned out, the past week, from the shop of Coffey & Risdon. They have been built for the steamer Orizaba, and as the first was moved, in all its huge proportions, slowly through Front street, on Monday and Tuesday, it elicited universal commendation and surprise from the great crowds of spectators who witnessed the unusual spectacle. Coffey & Risdon have manufactured both of these huge boilers for the steamer mentioned. They weigh thirty tons each, are thirty feet long, each boiler having three furnaces twelve feet long, forty inches wide and four feet high. There are also twenty-two flues in each boiler fourteen and a half inches in diameter. The steam chimneys to each boiler are twelve feet high and eight feet in diameter, thoroughly braced. It is gratifying to know that the foundries, machine, forge and hoiler shops of San Francisco are now able to turn out about every piece of machinery that enters into the composition of even our largest ocean steamers. We trust the time will soon come when we need no longer go to New York for either the hulls or machinery of any steamer which carries the American flag over the waters of the Pacific Ocean.

The second boiler, and mate to the above, is now on its way from the shop to the steamer. It is moved on rollers, with a horse and whim, in the same manner as houses are moved from one part of the city to another. These boilers are not only the largest ever built on this coast, but they are larger than any boiler in any steamer now, or at any previous time, on this coast. The boilers of the Constitution, if we are not mistaken, are smaller than these; but that steamer has four instead of two, as is the case with the Orizaba. So with regard to others of our largest class steamers.

**MORE SOAP ROOT.**—The Sacramento Bee of the 17th inst., notices the arrival in that city by railroad, of 1,500 pounds of prepared soap root—1,000 pounds of which came to this city, and 500 went up the river to Marysville. This article is now coming into general use in California as a substitute for curled hair, and at a price two-thirds less. As it abounds in nearly all the mountainous parts of the State, it may yet become an important article of production, and perhaps for export.

**A NEW STAMP MILL.**—Mr. A. B. Childs, an American, resident of London, England, has recently invented and patented what he calls an "Atmospheric Ore Stamp," which may be thus described: The piston (and stamp-head) is raised by an ordinary cam and shaft. The top of the stamp-stem is fixed in an air-chamber, like a piston in a steam cylinder. By means of proper valves, as the stem is forced up it creates a vacuum in the lower portion of the cylinder, by which great momentum and power is given to the falling stamp, as soon as it is dropped from the cam. It is claimed that by this arrangement as heavy a blow can be given by a 100-pound stamp, as by a six or seven hundred stamp, operated in the usual manner; while two of those stamps can be made to strike as many blows in a given time as ten ordinary stamps—doing the same amount of work. The advantage claimed is compactness and light weight of mill—an important consideration, where long transportation is required at a high price. The battery (of two stamps) is offered, complete, (without power) for about six hundred dollars.

## Foundry and Machine Work.

The San Francisco Foundry and Machine Works, owned by Messrs. Devoe, Dinsmore & Co., are turning out a large amount and variety of work at the present time. Saw-mills, steam engines, quartz mills, wrought iron work of every description, shafting, tubing, etc., are to be seen there in every stage of progress from the raw material up to the finished condition. They have just sent off an 80-horse engine, with sawmill complete, for Coos Bay; also a 10-stamp quartz mill, to be put up on a mine in Amador county, and a 5-stamp mill for a mine in Calaveras county.

Among the work in hand we noticed a 12-horse engine, which they are building for Coffey & Risdon, under contract for a flour mill in Sonoma county; also castings for the new Ensley Gas Company's works at Vallejo.

Several wine presses have recently been built at these works for parties in Sonoma county. They are also turning out large quantities of shafting and minor machinery for quartz, saw and flouring mills, at various localities in the interior, and up and down the coast.

The machine shops of this firm are constantly engaged upon various orders for general jobbing. Particular attention is paid here to all kinds of wrought iron work, forging by trip hammer, etc., etc. Among the novelties, at these works, we may mention Brown's Filtering Heater, which is used and made at this foundry. The object of this filter is to obviate the necessity of buying hydrant water for steam purposes. The proprietors assured us that several months trial of this Filter Heater has fully satisfied them of its value, and the economy of its use. The water which they are now using for steam is surface water, taken from within a few feet of the top of the ground, quite turbid, brackish, and highly charged with iron and other salts. It is pumped into a tank from which it is drawn into a close reservoir, divided into sections or chambers communicating by circuitous passages from one to the other. These chambers are stuffed with coarse hay or straw, which is renewed once in two weeks. The water passes into one end and is forced horizontally through the filtering material, from chamber to chamber to the other end of the tank, while the exhaust steam is at the same time discharged into it. Steam heats the water, and deposits whatever sediment it contains upon the straw, completely enveloping every individual straw with a coating of "scale." The water after passing through this filter does not deposit any more scale in the boiler than water taken from the hydrant. The saving thereby is quite an item; while the cost of purchasing and keeping up the filter is a mere trifle.

**DR. BUNNELL**, No. 611 Clay street, extracts teeth without pain, the patient simply breathing the chemically combined elements of air, oxygen and nitrogen. He has made an improvement connected with it, for which he has applied for letters patent (through the assistance of this office). This bids fair to become the Anæsthetic of the age. We are informed that it has been successfully administered to more than seventeen thousand persons by the "Colton Dental Association," and that it is becoming generally popular in the Eastern States, and that it leaves no unpleasant after effects, such as often follow the administration of other anæsthetics.



## ARMES &amp; DALLAM,

215 and 217 Sacramento street.

SAN FRANCISCO.

IMPORTERS AND JOBBERS OF

## WOODEN WARE.

Willow Ware,  
 Feather Dusters,  
 Baskets, in great variety,  
 Clothes Wringers,  
 Brushes, all kinds,  
 Paper Bags, all sizes,  
 Blacking,  
 Ten Pins and Balls,  
 Twines for all uses,  
 Fish Hooks and Lines,  
 Cordage,  
 Broom Materials, Stationery, Ballo Rope, etc., etc.

Having recently enlarged the capacity of our

## PIONEER

## WOODEN WARE MANUFACTORY,

To meet the demands of our rapidly increasing trade, we  
 are now extensively engaged in manufacturing

Brooms,  
 Brushes,  
 Pails,  
 Tubs,  
 Keckers,  
 Sieves,  
 Churns,  
 Fruit Boxes,  
 Salt Boxes,  
 Wash Boards,  
 Cheese Hoops,  
 Peach Baskets,  
 Broom Handles,  
 Cheese Saws,  
 Curtain Rollers,  
 Kegs, all kinds,  
 Pastry Boards,  
 Butter Molds,  
 Butter Tubs,  
 Tar Buckets,  
 Clothes Frames,  
 Barrel and  
 Half-bbl Covers,

And many other articles in the Wooden Ware line, of very  
 superior quality, which we offer to the trade at lower  
 prices than the imported article commands in the market.

We are SOLE AGENTS for the sale of

## SHERMAN'S

## Improved Clothes Wringer

For the Pacific Coast.

We would call the attention of the trade to the superiority of

## "ARMES' STAR EXTRA BROOMS,"

Being made from selected materials by the best workmen.  
 They are unequalled for durability, fineness and beauty of  
 workmanship. None genuine except those bearing a star  
 and the fac-simile of the signature of C. W. & G. W. ARMES  
 on the label. Trade mark secured. Parties ordering this  
 Broom should specify "ARMES' STAR EXTRA," to insure  
 their getting the genuine article.

Our customers can always rely upon having their orders  
 promptly filled with goods of superior quality at the low-  
 est market rates.

ARMES & DALLAM,  
 215 and 217 Sacramento street.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

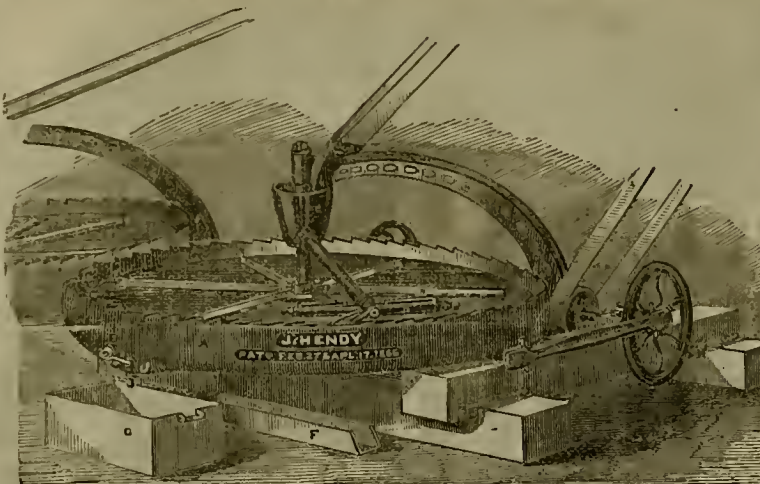


FIG. 1.

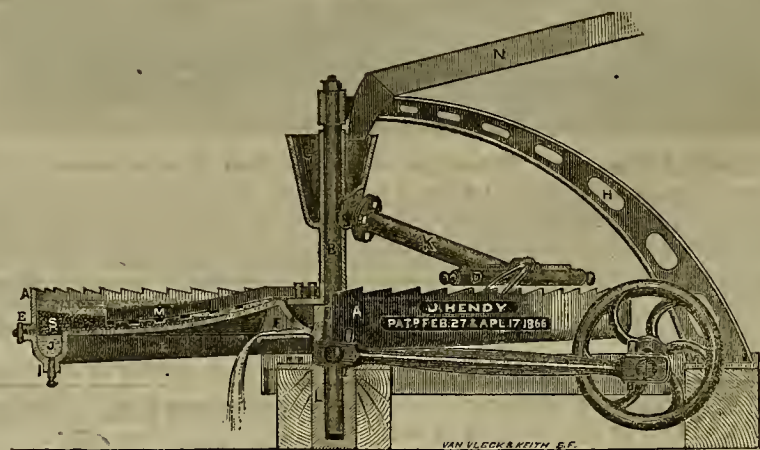


FIG. 2.

## FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

## Directions for Operating Hendy's Concentrators:

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
 FIRST—Set the Pan, A, level, by its inner rim.  
 SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
 THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
 FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

## References:

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:

EMPIRE MILL.....	Grass Valley, Nevada County.
GOLD HILL MILL.....	Grass Valley, Nevada County.
CONEY & BIGELOW MILL.....	Jackson, Amador County.
SPRING HILL MILL.....	Amador, Amador County.
GOLDEN GATE MILL.....	Volcano, Amador County.
OPHIR MILL.....	Placer County.
C. H. SCHNABLE'S MILL.....	Doty Flat, Placer County.
GOLDEN RULE MILL.....	Stewart Flat, Placer County.
BENTON MILL.....	Bear Valley, Mariposa County.
LOUISIANA MILL.....	Coulterville, Mariposa County.
RAWHIDE RANCH MILL.....	Jamestown, Tuolumne County.
PEOPLE'S MILL.....	Alleghany, Sierra County.
TYRON & CO'S MILL.....	Prescott, Arizona.
WOOLSEY & CO'S MILL.....	Prescott, Arizona.
NOYES & CO'S MILL.....	Prescott, Arizona.
GUADALUPE & SACRAMENTO G. & S. M. CO.....	Sinaloa, Mexico.
TRIUNFO G. & S. M. CO.....	Lower California.

And in use in many other parts of this coast.

These Machines are made of iron, thoroughly constructed and ready for immediate use.  
 For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have  
 Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of  
 pretended merit.

## Remarks:

Many Concentrators have been gotten up in this city. Some of these claim foreign  
 origin; others are of home production. The sonorous Greek names, with which some  
 of these have been dignified, ought, it would seem, to have entitled them to a better fate  
 than that which has befallen them. A large proportion of these machines are now  
 "numbered among the things that were." A few were still-born; never having had  
 an existence except in the shape of advertisements and cuts, prematurely prepared by  
 their too confident projectors. For one of these it was claimed, with a grand flourish  
 of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order  
 or in the way." Unfortunately, however, although it had a reasonable supply of legs, it  
 obstinately refused to run. Amputation failed to remedy the defect, and it now lies  
 forgotten among a heap of old iron,—a mechanical abortion.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works,  
 for 1866, pages 51, 53.

## CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

March, 1867.

JOSHUA HENDY, Patentee,  
 Union or Fulton Foundry, San Francisco.

PATTERN LIST.—We acknowledge the receipt of a bound copy of the Pacific Foundry  
 "Pattern List and Circular," containing  
 useful tables and instructions for mechanics  
 and millmen. Copies, we presume, can be  
 had free by addressing Messrs. Goddard  
 & Co.

**Builders' Insurance Company—**  
 OFFICE IN THE BUILDING OF THE  
 CALIFORNIA SAVINGS BANK, California  
 street, one door from Sansome street.  
 FIRE AND MARINE INSURANCE. 10v149pqr

**Gold Bars,** of whatever size, if well cast, assayed  
 for two dollars, at A. P. MOLITOR'S Assay Office,  
 611 Commercial street, opposite United States Branch  
 Mint. 15v14-3m

The People's Friend—Perry Davis' Vegetable  
Pain Killer.

The greatest Family Medicine of the age! Taken inter-  
 nally, it cures sudden Colds, Coughs, etc., Weak Stomach,  
 General Debility, Nervous Sore Mouth, Canker, Liver Com-  
 plaint, Dyspepsia or Indigestion, Cramp and Pain in the  
 Stomach, Bowel Complaint, Rheumatism, Cholera, Asiatic Chol-  
 era, Diarrhoea and Dysentery. Applied externally, cures  
 fevers, boils and old sores, severe burns and scalds, cuts,  
 bruises, and sprains, swollen joints, ringworm and tetter,  
 broken breasts, frost-bitten feet and chilblains, toothache, pain  
 in the face, neuralgia and rheumatism. It is a sure remedy  
 for ague and chills and fever.

Sold by all Medicine Dealers everywhere. 20v14-3

HARRIS BROS.,  
OUTTERS, LOOKSMITHS, BELLHANGERS  
And Model Makers.

208 Leidesdorff street, bet. Sacramento and Commercial,  
 SAN FRANCISCO. 21v14-4f

## LINSEED OIL.

## The Pacific Linseed Oil &amp; Lead Works

Are now prepared to furnish dealers and consumers

## Pure Linseed Oil,

Raw or Boiled, at the Lowest Market Rates. We call es-  
 pecial attention to the quality of our Oil, believing it to be  
 superior to any imported Oil offered in this market.

Orders from the country will have prompt attention.

Address,

Pacific Linseed Oil and Lead Works,

Care of L. B. BENCHLEY &amp; CO.,

19v14-3m9p San Francisco.

## PACIFIC

Rolling Mill and Forge Co.,  
SAN FRANCISCO, CAL.

Established for the Manufacture of

## RAILROAD AND OTHER IRON

## Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Con-  
 necting Rods, Car and Locomotive Axles  
 and Frames.

## HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and  
 FORGE CO., Post Office, San Francisco, Cal., will receive  
 prompt attention.

The highest price paid for Scrap Iron. 9v143m9p

## A. S. Hallidie &amp; Co.,

## FLAT &amp; ROUND WIRE ROPE.

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach

SAN FRANCISCO.

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH  
 less than that of any other kind of Rope of equal  
 strength, and it is four times as durable. Wire Rope does  
 not stretch or shrink by atmospheric changes; it has but  
 one-fifth the bulk of Hemp Rope; is spliced and repaired  
 in the same manner.

The attention of Mining Companies is particularly called  
 to our Flat and Round Hoisting Ropes, which have been in  
 use for a number of years by the leading mines on this  
 Coast, and to any of whom we refer those interested as to  
 the great advantages over any other kind of rope; effecting  
 a immense saving in expenditure for ropes, fuel, wear and  
 tear of machinery, stoppage of works, etc., besides increas-  
 ing safety of life.

Mining Companies, in erecting Hoisting Works, should be  
 sure and have their drums and pulleys of sufficient size,  
 whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—  
 very strong and durable—one third the weight of hemp  
 of equal strength, (saving in freight for remote localities).  
 Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire  
 Ropes—for Ships' Rigging, Derrick Gears, Ferry Ropes,  
 and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks  
 supplied.

Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{1}{4}$ -inch diam-  
 eter, for hanging window shades; Signal Cord; Sash Pulley  
 on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel  
Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.		Steel Wire Rope.		Hemp Rope.		Chain.		Equivalent Strength.	
Cir. inches.	Wt. per 100 ft.	Cir. inches.	Wt. per 100 ft.	Cir. inches.	Wt. per 100 ft.	Size Link.	Wt. per 100 ft.	Brk'g Str'n.	Wt. per 100 ft.
2	<i>lbs.</i> 53	1½	<i>lbs.</i> 33	5	100	¾	266	<i>tons</i> 7	2,300
2	83	2	55	6	130	1 3/8	341	11	3,700
3½	170	2½	91	8	235	¾	533	19	6,300

Pamphlets containing data, with prices annexed, for-  
 warded free, by mail or express, on application to manu-  
 facturers. 25v14-3m9p





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic Hay, Kart, screw and Drop Presses, Oiling Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flue, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's Improved flat bottom pan, Beldin's pan, Veatch's tubs, Prater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Gams, Pans and Tubs. BLAKE'S PATENT QUARTZ CRUSHERS, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quarts and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.  
24v12

IRVING M. SCOTT  
H. J. BOOTH & CO.

## Machinists and Foundries.

**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
Nos. 19, 21, 23 and 25 First Street,  
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY,**  
STEAM ENGINES AND QUARTZ MILLS.  
DUNBAR'S IMPROVED

**Self-Adjusting Piston Packing.**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
JAMES HEPEURN & PETERSON'S

**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in crushing or in milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

**WILLAMETTE IRON WORKS,**  
PORTLAND, OREGON.

**Steam Engines, Boilers,**  
**SAW AND CRIST MILLS,**  
MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
Corner North-Front and E streets,  
18v13-ly One block north of Couch's Wharf.

**UNION IRON WORKS,**  
Sacramento.

**WILLIAMS, ROOT & NEILSON,**

MANUFACTURERS OF  
**CROSS' PATENT BOILER FEEDER,**  
**STEAM ENGINES, BOILERS,**  
And all kinds of Mining Machinery.  
Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

**Dunbar's Patent Self-Adjusting Steam Piston**  
**PACKING,** for new and old cylinders, manufactured to order.  
Front Street, between N and O streets,  
14v11 SACRAMENTO CITY

**GLASGOW**  
**IRON & METAL IMPORTING COMPANY,**  
Nos. 25 and 27 Fremont street, near Market,  
SAN FRANCISCO.

Bar and Sheet Iron; Boiler Plates and Tubes; Gas and Water Pipes, Gas Fittings, Anvils, Cast Steel, etc. 18v12-2m

**GEORGE T. PRACY,**  
**MACHINE WORKS,**  
Nos 109 and 111 Mission street, between Main and Spear,  
SAN FRANCISCO.

**STEAM ENGINE, FLOUR AND SAW MILL**  
And Quartz Machinery, Printing Presses,  
—AND—  
MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.  
23-Special attention paid to Repairing. 23 4v3

**SAN FRANCISCO**  
**Foundry and Machine Works,**

N. E. Cor. Fremont and Mission streets,  
Manufacturers of  
**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—  
**Wine, Cider, Cotton and Tobacco Presses**  
of the latest Improved Patterns.

**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

**Dunbar's Improved Self-Adjusting Piston-Packing,** requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**MACHINERY OF ALL DESCRIPTIONS**  
Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.  
6v11y **DEVOL, DINSMORE & CO**

**GLOBE**  
**Foundry and Machine Shop,**  
STOCKTON, CAL.

**KEEP, BLAKE & CO.,**  
MANUFACTURERS OF

**Quartz, Saw and Grist Mill Irons, Steam**  
**Engines, Horse Powers,**  
Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited and promptly executed.  
18v13-ly

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**LEWIS COFFEY & RISDON,**  
**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
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ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.  
KEY PRICES MODERATE.  
V. KINGWELL. 18v13-1y J. H. WEED.

J. O. HANSCOM; H. S. SMITH. **HANSCOM & CO.,** 17 FENDERGAST, W. W. HANSCOM.

**Aetna Iron Works!**  
Southeast corner Fremont and Tehama streets,  
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**Practical Machinists and Iron Founders,**  
MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
SAW MILLS, FLOUR MILLS,  
Dunbar's Improved Self-Adjusting  
**PISTON PACKING.**

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grinder and Amalgamator,**

Which only needs examination to be appreciated.  
**Tyler's Improved Water Wheel,**

Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full particulars. All Wheels warranted to give the power as set forth, or the money will be refunded.

**Sole makers for this coast of the "Pendergast White Iron Stamp Shoes and Dies."**

None genuine unless obtained from us. Every one warranted. Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.  
18v12

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**HINCKLEY & CO.,**  
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**Moore's Grinder and Amalgamator, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.**

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**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont Streets,  
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**MARINE,**  
**Locomotive,**  
And all kinds of  
**HIGH PRESSURE**  
**Steam Boilers**  
MADE.  
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.  
All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.  
**Old Boilers Repaired**  
**D. CAMERON.**  
6v12 1y

**MINING FOR BOULDERS.**—The Esmeralda Union says that Mr. J. J. Poor, of Aurora, has commenced "washing" for boulders about the hills near the Union Mill, of which he is the owner. The melting snow upon the higher hills furnishes him the necessary water, and he expects to make a "good thing" out of the operation. He hopes to collect boulders sufficient to keep his mill running a good part of the summer. Gathering up boulders for crushing is no new thing in California, and has sometimes been made to pay largely. The wonder is that no more of such work has been done.

**MORE MARBLE.**—It is said that a bed of marble has recently been discovered on the farm of Mr. Applegate, seven miles distant from Colfax. The marble is purely white, admits of a superior polish, and is pronounced equal to the finest Italian. The lode is situated only two miles from the Pacific railroad, and if proven to be as extensive as is anticipated, will be an immense fortune to the lucky owners.

**PETROLEUM FROM SHALE.**—In connection with the effort now being made at Corral Hollow, to obtain petroleum from shale, it may be interesting to state that from seven to eight million gallons per annum, are manufactured from the shale or refuse of the bituminous coal beds of Wales and Scotland. Large amounts of paraffine are also obtained from the same source. The average yield of the shale is about twenty gallons of crude oil to the ton.

**BAY RUM SOAP.**—Bay rum has from time immemorial been used for the healthiness it imparts to the skin. Mr. Hull, of New York, has produced a soap in which the article is incorporated, which will supersede the use of bay rum in the ordinary way, and is therefore very desirable in the nursery, bath room, or upon the washstand.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

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F. CLERC, R. KLEINCLAUS, W. DEERIE.  
**CLERC & CO.,**

Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.  
No. 28 FREMONT STREET, San Francisco.  
3v146m

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**SOUTH BEACH IRON WORKS,**  
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**MARINE ENGINES,**  
AND ALL KINDS OF  
**MACHINERY FORGING.**  
All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed.  
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**JOHN LOCHHEAD'S**  
**Steam Engine Works,**  
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STEAM ENGINES OF EVERY DESCRIPTION BUILT to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the  
**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular.  
2v12-3m



**A CONVENIENT BAG HOLDER.**—A correspondent of the *American Agriculturist* suggests as a convenient bag holder, a barrel with both heads knocked out and a few nails driven into one end. The open end of the bag is hung over these nails. When the bag is filled, the barrel may be lifted off. Many grain bags are too small to be fastened to opposite sides of a barrel. Hooks extending some inches from one side of the barrel would remedy this trouble.

**A NEW EMPLOYMENT FOR THE CHINESE.**—A correspondent of the *London Times* recommends that Chinamen be enlisted in the English army, for the reasons that they are hardy, strong, good-tempered, and can stand heat and cold; that they make excellent soldiers, and will eat anything, "from roast beef and plum pudding to rice and rats."

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WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, constantly on hand. San Francisco March 6, 1865 11v10-4f

## The Mercantile Gazette

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PUBLISHED EVERY STEAMER DAY.

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13v13-1c

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**COMPANY'S**

### BLASTING POWDER!

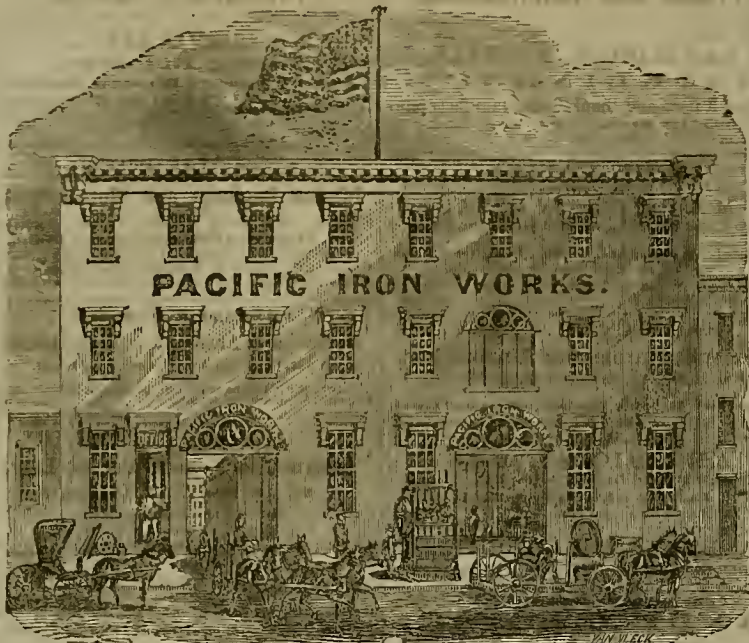
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3v14-1m

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THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
OS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m



## THE PACIFIC IRON WORKS,

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

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FRUITS, NUTS, CONFECTIONERY, Etc.,  
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A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
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**THE WILLCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly. Come and see it, or send for Report of the trial.  
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**POWDER MILLS. PAPER MILLS,**

**Steam Engines of all Kinds.**  
**Amalgamators of all Kinds.**  
**MINING PUMPS. HOISTING WORKS,**  
**OIL WELL TOOLS. ROCK BREAKERS,**

—AND—  
**Machinery and Castings of all kinds, either**  
**of Iron or Brass.**  
**Boilers and Sheet Iron Work in all its**  
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Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russian Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable, of any Engine in use.  
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13v14-7f

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
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Files Recut and warranted as good as new, or no charge. The only establishment in the State. We also manufacture Reaper and Mower Sections.  
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**HEALY'S CURATIVE OIL, FOR THE SURE AND**  
speedy extermination of Pain, having no equal in the world, is now being universally sought after by all classes throughout the Pacific Coast. The Miner, the Merchant, the Artisan, the Laborer, the Farmer, and the Merchant, pronounce it the "greatest Remedy of the age." Are you afflicted with Rheumatism? Use Healy's Curative Oil! Have you the Headache? Use Healy's Curative Oil! Have you a Sore Throat? Use Healy's Curative Oil! Have you the Toothache? Use Healy's Curative Oil! Are you subject to Cramps? Use Healy's Curative Oil! And for the cure of Cuts, Burns, Sprains, and the bites of poisonous insects, it has no equal in the world. A sure and permanent cure guaranteed in every case. Full directions on every bottle. None require unless the fac simile signature of FRANK HEALY is on the outside wrapper of the bottle.  
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THE STREET CARS PASS THIS HOUSE IN every direction every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half day are required to pay at hotels.  
17v13-6m SANBORN & CO

### MEUSSDORFFER,

Nos. 635 and 637 Commercial Street,  
—WILL INTRODUCE—  
On Saturday, February 9, 1867.  
An Entirely New Style of

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"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
Call and see them. 8v14

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BETWEEN MONTGOMERY AND KEARNY STS.,  
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THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city in respect to the Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2 per day for Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

Terms belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.  
21v12 F. E. WEYGANT, Proprietor.

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Sulphuric, Nitric and Muriatic Acids of superior quality,  
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Orders will be received at the office only for Chemicals of  
every description, which will be manufactured as may be  
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manufacture and manipulation of these products, and our  
Laboratory is fitted up with the most recent improvements  
which experience and science suggest, and is surpassed by  
none in completeness and perfection for the purposes it is  
designed. 9v14-3m

BLAKE'S PATENT  
QUARTZ CRUSHER.

## CAUTION!

The owners of the Patent for this valuable machine, in  
order to facilitate the protection of their rights against un-  
authorized infringers, procured, some time since, a reissue of  
the Patent, bearing date January 9th, 1866.

This Patent secures the exclusive right to em-  
ploy in Stone-Breaking Machines Up-  
right Convergent Jaw, actuated  
by a Revolving Shaft.

All persons who are violating the Patent by the unau-  
thorized making, selling or using machines in which quartz  
or other material is crushed between upright convergent  
jaws, actuated by a revolving shaft, are hereby warned that  
they are appropriating the property of others, and  
that they will be held responsible in law and in damages.

Several infringing machines are made and offered for  
sale in this city, upon which Patents have been obtained.  
Manufacturers, purchasers and users, are notified that such  
Patents do not authorize the use of the original invention,  
and that such machines cannot be used without incurring  
liability for damages. BLAKE & TYLER,  
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OUR IMMENSE STOCK

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## Fine Custom Made Clothing

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Trunks, Valises, Carpet Bags, Blankets, Etc.,  
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Leave Hongkong Twice a Month,

On the 1st and 15th in the Northeast Monsoon,  
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From Point de Galle their steamers run to Madras,  
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to King George's Sound, Melbourne and Sydney.

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Swatow, Amoy, Foochow, Shanghai, and Yokohama.  
HONGKONG, 1867. 13v14tf

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MARBLE WORKS,  
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Monuments, Tombs, Plumber's Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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641 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Burial Caskets and Cases,  
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ARTIFICIAL LEG.  
Manufactured in Philadelphia, Penn.  
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LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by  
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CONSTANTLY ON HAND A LARGE ASSORTMENT

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## MANILA CORDAGE,

Whale Line, Bale Rope, etc.,

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PATTERNS AND MODELS,  
(Over W. T. Garratt's Brass Foundry.)

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EMERY & EATON'S  
GREEN SEAL SMOKING TOBACCO,  
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2,000 KEGS ASSORTED SIZES,

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Lowest Rates, by

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GOLDEN STATE POTTERY,  
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Fire Bricks, Fire Clay, and Stoneware.  
Prepared to fulfill all orders at the shortest notice.  
20v14tf

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Office is abundantly supplied with elegant engravings, or-  
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Mining Engineer,  
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Will examine, survey and report upon mines, and consult  
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the machinery management and expenditures of mines.  
229

CHAS. LIEBENAU,  
Mining Engineer and Metallurgist,  
(Graduate of the Mining Academy, Freiberg, Germany.)  
Oro, Flint District, Owyhee Co., Idaho.  
References.—George Hearst, John W. Gashwiler, Richn.  
Hemme & Co., and J. M. McDonald, San Francisco; E. E.  
Purple, New York; William Bigler, Penn. 14v14-3m

FREDERICK MANSSELL.  
Mechanical & Architectural Draughtsman,  
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Drawings of MONUMENTS made for parties applying for pa-  
ents at Washington or London. mar23-tf

GREGORY YALE,  
Attorney and Counsellor at Law,  
No. 18 Merchants' Exchange,  
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Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 25th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

E. V. JOICE,  
NOTARY PUBLIC,  
N. E. cor. of Washington and Battery sts.  
12v14tf SAN FRANCISCO.

FELTON & TAYLOR,  
Attorneys and Counsellors at Law,  
Court Block, 636 Clay Street,  
SAN FRANCISCO.  
Will practice in the State and Federal Courts. Special at-  
tention given to proceedings under the Patent Law. 15v14-1q

GEO. T. KNOX AND E. V. SUTTER,  
COMMISSIONERS OF DEEDS.

NOTARY PUBLIC,  
615 Montgomery Street,  
San Francisco. 16v14tf

W. E. GOLDSMITH.  
Card and Seal Engraver,  
505 Montgomery street, n-p-stairs, (over Tucker's.)  
SAN FRANCISCO.  
Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commission and Society Seals. 19v13-2q

DR. H. AUSTIN,  
DENTIST,  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-4y

J. W. WINTER,  
DENTIST.  
Office, 647 Clay street.....San Francisco.  
First-class gold fillings for \$3, as good as any dentist can  
produce in the city. Dr. Winter has practiced Dentistry  
twenty years—in this State. For a full upper set of  
gold teeth, on vulcanite base, from \$20 to \$35. Teeth ex-  
tracted without pain by local application. 18v14-1f

Pacific Mail Steamship Co's  
STEAMSHIPS FOR  
NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11  
o'clock A. M. of the following dates, for  
PANAMA, connecting via Panama Railroad, with one of  
the Company's splendid steamers from ASPENWALL for  
NEW YORK.

On the 10th, 18th and 30th of each month that has

31 days.

On the 10th, 19th and 30th of each month that has

31 days.

When the 10th, 19th and 30th fall on Sunday, they will

leave on Saturday preceding; when the 18th falls on Sun-  
day, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at

Manzanillo. All touch at Acapulco.

Departure of 18th or 19th connect with French Trans-

Atlantic Co.'s steamer for St. Nazaire, and English steamer

for South America.

Departure of 10th connects with English steamer for

Southampton and South America, and F. B. R. Co's

steamer for Central America.

The following Steamships will be dispatched on dates as

given below:

May 20th—SACRAMENTO.....Capt. J. M. Cavarly.

Connecting with OCEAN QUEEN, Capt. Maury.

Cabin passengers berthed through. Baggage checked

through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attend-

ance free.

These steamers will positively sail at 11 o'clock. Passen-

gers are requested to have their baggage on board before 10

o'clock.

Through Tickets for Liverpool by the Cunard, Inman and

National Steamship Lines can be obtained at the office of

the P. M. S. S. Co., San Francisco.

For Merchandise and Freight for New York and way

ports, apply to Messrs. WELLS, FARGO & CO.

For passage and all other information, apply at the Pa-

cific Mail Steamship Co's office, corner of Sacramento and

Leidsdorff streets.

OLIVER ELDRIDGE, Agent.

EDWARD W. TIFFT,  
DEALER IN ALL KINDS OF  
WOOD AND COAL,  
No. 513 Bush Street, between Dupont and Stockton  
14v14-6m SAN FRANCISCO.

Dr. Hufeland's Swiss Stomach  
Bitters.

THE WORLD RENOWNED REPUTATION, TOGETHER  
with the extensive and increasing demand for Dr. Hufe-  
land's Swiss Stomach Bitters, will at once recommend them  
to the favorable notice of all connoisseurs and lovers of a  
good and healthful tonic and invigorator. As a purifier of  
the blood, acting surely, yet gently, on the secretions of  
liver and kidneys, they are unsurpassed and a most agreea-  
ble drink.



For sale at all wholesale and retail stores on the Pacific  
Coast, and at the depot of A. LOR & BROS., 418 and  
415 Clay street, between Sansome and Battery, San Fran-  
cisco. 20v14-6m

## New Mining Advertisements.

Cordillera Gold and Silver Mining Company,  
Cibola, New Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-seventh  
day of April, 1867, an assessment of one (\$1) dollar per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold coin, to the Secre-  
tary, No. 321 Washington street, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twentieth day of June, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the eighth day of July, 1867, to pay the  
delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

HENRY R. REED, Secretary.  
Office, 321 Washington street, San Francisco, Cal. my25

Hanscom Copper Mining Company. Location:

Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-first day  
of May, 1867, an assessment of twenty-five cents (25c) per  
share was levied upon the capital stock of said Company,  
payable immediately in United States gold and silver coin,  
to the Secretary, at the Elma Iron Works, Fremont street,  
between Howard and Folsom, San Francisco, Cal.  
Any stock upon which said assessment shall remain un-  
paid on the twentieth day of June, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the eighth day of July, 1867, to pay the  
delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

JOHN HANSCOM, Secretary.  
Office, at the Elma Iron Works, Fremont street, between  
Howard and Folsom, San Francisco. Office hours from 8  
A. M. to 12 M. my25

Hoppe Gravel Mining Company.—Location of  
Works and Property: Grass Valley, Nevada County, Cal-  
ifornia.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment (No. 14) levied on  
the fifteenth day of April, 1867, the several amounts set  
opposite the names of the respective shareholders, as fol-  
lows:

Names.	No. Certificate.	No. Shares.	Amount.
McAlmond, E. H.	32	75	\$75 00
McAlmond, E. H.	122	10	10 00
McAlmond, E. H.	133	40	40 00
McAlmond, E. H.	135	6	6 00

And in accordance with law, and an order of the Board of  
Trustees, made on the fifteenth day of April, 1867, so  
many shares of each parcel of said stock as may be ne-  
cessary, will be sold at public auction, by Maurice Dore &  
Co., at No. 327 Montgomery street, San Francisco, Cal. on  
Tuesday, the eleventh day of June, 1867, at the hour of 12  
o'clock noon, of said day, to pay said delinquent assess-  
ment thereon, together with costs of advertising and ex-  
penses of sale.

DAVID WILDER, Secretary.  
Office, No. 329 Clay street, San Francisco, Cal. my25

Mount Davidson Gold and Silver Mining Com-  
pany, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second day  
of May, 1867, an assessment of one dollar (\$1) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin, to  
the Secretary, at the office of the Company.

Any stock upon which said assessment shall remain un-  
paid on the twenty-eighth day of June, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the fifteenth day of July, 1867, to pay the  
delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

G. PARDO, Secretary.  
Office, 141 Sutter street, San Francisco, Cal. my25

Nuestra Señora de Guadalupe Silver Mining  
Company. Location of Works: Tayoltita, San Dimas  
District, Durango, Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twentieth day of  
May, 1867, an assessment (No. 27) of one dollar (\$1) per  
share was levied upon the assessable capital stock of  
said Company, payable immediately, in United States gold  
and silver coin, to the Secretary, E. J. PFEIFFER, at the  
office, No. 210 Post street, or to the Treasurer, A. H. H. WELLS,  
at his office, No. 637 Washington street, San Francisco.

Any stock upon which said assessment shall remain un-  
paid on the twentieth day of June, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Wednesday, the tenth day of July, 1867, to pay the  
delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco, Cal. my25

Rattlesnake Gold and Silver Mining Com-  
pany, Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-second  
day of May, 1867, an assessment of one dollar (\$1) per  
share was levied upon the capital stock of said Company,  
payable immediately, in United States gold and silver  
coin, to the Secretary, 315 California street, San Francisco,  
California.

Any stock upon which said assessment shall remain un-  
paid on the twentieth day of June, 1867, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the fifteenth day of July, 1867, to pay the  
delinquent assessment, together with costs of adver-  
tising and expenses of sale. By order of the Board of  
Trustees.

JOHN F. LOISE, Secretary.  
Office, 315 California street, up-stairs, San Francisco. my25



### Union Copper Mining Company, No. 2.—Lodge or Claim situated in Copper Canon District, County of Calaveras, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Geo. Hardy.....	32	80	\$120.00
J. M. Byrne.....	34	50	25.00
J. M. Byrne.....	35	50	25.00
J. M. Byrne.....	36	50	25.00
Richard Newby.....	46	115	57.50
K. K. Stevenson.....	41	25	12.50
K. K. Stevenson.....	42	25	12.50
David Porter.....	38	75	37.50
Geo. Longdon.....	25	25	12.50
A. Tomler.....	26	150	75.00
J. R. Thibault.....	43	75	37.50
Ch. G. Grellet.....	45	150	75.00
J. P. Platt.....	29	149	74.50
John T. McLean.....	not issued	112	56.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dora & Co., at No. 327 Montgomery street, San Francisco, California, on the tenth day of June, 1867, at the hour of 12 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

OYE. TOUCHARD, Secretary.

Office, No. 416 California street, San Francisco. my25

### Mining Notices—Continued.

#### Butopolis Mining Company, Batopolis District, State of Chihuahua, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment (No. 3) levied on the eleventh day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Samuel J. Farran.....	1	20	\$40.00
Samuel J. Farran.....	2	20	40.00
Samuel J. Farran.....	3	10	20.00
J. R. Mitchell.....	4	6	12.00
J. R. Mitchell.....	5	6	12.00
Mr. Emma E. Van Brunt.....	6	60	120.00
Win E. Dommett.....	7	13	26.00
Win E. Dommett.....	8	13	26.00
Win E. Dommett.....	9	13	26.00
Win E. Dommett.....	10	13	26.00
Joseph P. Eas.....	11	25	50.00
A. C. Watt.....	12	40	80.00
R. B. Stoddard.....	13	4	8.00
Chas. F. Brown.....	14	25	50.00
Edward H. Parker.....	15	38	76.00
James F. Hough.....	16	25	50.00
James F. Hough.....	17	25	50.00
Charles F. Schulze.....	18	44	88.00
Telford MacCann.....	19	21	42.00
Edward MacCann.....	20	21	42.00
William MacCann.....	21	21	42.00
Charles Pace.....	22	13	26.00
D. D. Shattuck.....	23	13	26.00
Robert Cove.....	24	12	24.00
Arthur M. Ebbels.....	25	57	114.00
Charles Dulsenberg.....	26	76	152.00
Phillip Donohue.....	27	32	64.00
B. F. Lowe.....	28	215	430.00
Roberts, Morrison & Co.....	29	76	152.00
A. C. Hendley.....	30	126	252.00
A. C. Hendley.....	31	25	50.00
Charles J. Farran.....	32	25	50.00
M. Irvenhu.....	33	50	100.00
Mr. Carrie M. P. Coleman.....	34	95	190.00
Mr. Carrie M. P. Coleman.....	35	126	252.00
Henry Burroughs.....	36	13	26.00
Henry Burroughs.....	37	10	20.00
George Hall.....	38	12	24.00
Edward C. Lovell.....	39	32	64.00
L. Wadham.....	40	6	12.00
John H. Slevens.....	41	19	38.00
Charles Summ.....	42	59	118.00
George A. Parker.....	43	31	62.00
Thomas A. Hughes.....	44	25	50.00
J. E. Jorgensen.....	45	13	26.00
George H. Rader.....	46	25	50.00
Charles R. Stout.....	47	8	16.00
Margaret Madigan.....	48	6	12.00
William Lull.....	49	24	48.00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Maurice Dora & Co., No. 327 Montgomery street, San Francisco, on Monday, the third day of June, 1867, at the hour of 2 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. MARTINON, Secretary.

Office, 811 Montgomery street, up stairs, San Francisco, Cal. my18

#### Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate	No. Shares	Amount
Camp, Jas.....	74	3	\$60.00
Drinkhouse, J. A.....	6	3	60.00
Dinkelspiel, L.....	51	3	60.00
Harker, W. B.....	23	10	200.00
Harker, W. B.....	24	20	400.00
Harker, J. W.....	134	3	60.00
Jacks, N. B.....	85	4	80.00
Fassett, N. C.....	132	20	120.00
Gray, Asaph.....	133	3	60.00
Lander, B. C.....	69	3	120.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of 2 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, 402 Front street, San Francisco. mar30

POSTPONEMENT.—The above sale is hereby postponed until Friday, the 21st day of June, 1867, at the same hour and place. By order of the Board of Trustees.

my25 N. C. FASSETT, Secretary.

#### Chalk Mountain Blue Gravel Company.—Location of Works: Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first (1st) day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth (17th) day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, No. 5 Government House, corner Washington and Sansome streets, San Francisco, California. may4

#### Cisco Seores Gold and Silver Mining Company.

Copala, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 323 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.

Office, No. 323 Clay street, San Francisco. my4

#### Dixon Gold and Silver Mining Company.—Location of Works: Lander County, Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-second day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names	No. Certificate	No. Shares	Amount
H. H. Allen.....	236	3	\$15.00
Oliver Ames.....	388	50	250.00
F. T. Anderson.....	389	10	50.00
Harry C. Angell.....	360	10	50.00
T. O. Bateman.....	211	4	20.00
E. G. Bidleman.....	333	174	87.75
Chas. B. Bidleman.....	334	100	50.00
Henry Blancy.....	362	6	30.00
Geo. Wm. Bond.....	363	10	50.00
John Browster.....	364	10	50.00
J. R. Bidleman.....	365	10	50.00
Deliver S. Chapman.....	366	20	100.00
Calwell Curry.....	367	10	50.00
Thos. Dwyer.....	368	50	250.00
George E. Dowling.....	369	100	500.00
Wm. Endicott, Jr.....	370	10	50.00
Flowers & Chapin.....	371	10	50.00
Wm. H. Forbes.....	372	10	50.00
John Gardner.....	373	20	100.00
A. Gilmore.....	374	20	100.00
E. W. Gilmore.....	375	20	100.00
E. W. Gilmore.....	376	20	100.00
John Hastings.....	377	10	50.00
John Hastings.....	378	242	121.00
John Hastings.....	379	242	121.00
Mark Healy.....	380	150	75.00
Alonso P. Howard.....	381	10	50.00
Wm. Pridham.....	382	1	5.00
M. S. Scudder.....	383	12	60.00
Geo. S. Stearns.....	384	30	150.00
J. H. Stephenson.....	385	33	165.00
James Stearns.....	386	9	45.00
Amie P. Sullivan.....	387	10	50.00
Amie P. Sullivan.....	388	25	125.00
Wm. S. Tilton.....	389	5	25.00
H. B. Whitteigh.....	390	5	25.00
Henry Whitney.....	391	5	25.00
E. A. Wild, Trustee.....	392	10	50.00
E. A. Wild, Trustee.....	393	10	50.00
E. A. Wild, Trustee.....	394	10	50.00
E. A. Wild, Trustee.....	395	10	50.00
C. C. Walworth.....	396	10	50.00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Jones & Bendixen, at the office of the Secretary, corner Front and Clay streets, San Francisco, on the fourth day of June, 1867, at the hour of 12 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.

Office, northeast corner Front and Clay streets, San Francisco. my11

#### De Soto Gold and Silver Mining Company.—Location of Works: Siar District, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of April, 1867, an assessment of sixty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 38 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the nineteenth day of May, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN M. BURNETT, Secretary.

Office, No. 38 Exchange Building, northwest corner of Montgomery and Washington streets, San Francisco, California. ap27

#### George Washington Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of April, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names	No. Certificate	No. Shares	Amount
Alldorfer, Geo.....	132	3	\$15.00
Alldorfer, Geo.....	133	3	15.00
Allen, John H.....	353	3	15.00
Boggs, Geo W.....	137	6	30.00
Blair, J. S.....	138	25	125.00
Bray, J. G.....	102	10	50.00
Brewer, M. T.....	321	6	30.00
Billier, Henry.....	337, 338 5-a	10	50.00
Bolls, Geo.....	33	10	50.00
Cook, A. J.....	93	10	50.00
Cove, J. B.....	362	10	50.00
Caldwell, M.....	161	10	50.00
Chapman, Mrs M.....	117	5	25.00
Chopson, Mrs M.....	238	2	10.00
Coom, M. R.....	325	25	125.00
Corn, M. R.....	unissued	15	75.00
Carmichael, A.....	328	10	50.00
Carmichael, A.....	333	5	25.00
DeGraff, Wm.....	142, 143, 144, 145	60	300.00
Elde, Nelson.....	146, 218 10-a	60	300.00
Gengnagel, Jacob.....	402, 403 5-a	10	50.00
Clifford, John.....	73, 74 10-a	20	100.00
Harris, D. C.....	266, 267, 268	6	30.00

Herbert, Mrs H..... 269, 339 5-a 25 125.00  
Hastie, Robt..... 20 10 50.00  
Hastie, Robt..... 21 10 50.00  
Hutches, James..... 179 10 50.00  
Hughes, James..... 292 3 15.00  
Hudson, David..... 123 25 125.00  
Hudson, David..... 124 40 200.00  
Hudson, David..... 109 4 20.00  
Huckney, H. W..... 368 5 25.00  
Hayward, C. C..... 145 25 125.00  
Iverson, Iver..... 154 2 10.00  
Iverson, Iver..... 162 5 25.00  
Johnson, Dennis..... 153 2 10.00  
Johnson, Geo W..... 148 10 50.00  
Kather, Chas..... 394 10 50.00  
Mudgett, John..... 261, 262 5-a 10 50.00  
McFee, James..... 78 5 25.00  
Miller, John..... 108 5 25.00  
Miller, J. E..... 405 15 75.00  
Miller, Levi..... 281 6 30.00  
Montgomery, R. F..... 65 40 200.00  
New, Jas A..... 197 10 50.00  
Nylett, Jas..... 327 10 50.00  
Marshall, J. C..... 335 13 65.00  
Mechowick, J..... 336 10 50.00  
McDonnell, A. C..... 391 7 35.00  
Phillips, W. L..... 275 10 50.00  
Ridenour, W. C..... 63, 330 3-a 30 150.00  
Robert, J. S..... 279 6 30.00  
Risley, J. B..... 349 4 20.00  
Risley, J. B..... 350 6 30.00  
Snowwater, John..... 334 5 25.00  
Spriggs, J. M..... 337 5 25.00  
Stribling, M..... 249 1 5.00

Names	No. Certificate	No. Shares	Amount
Stephens, Andrew.....	unissued	5	25.00
Thyer, Richard.....	154	2	10.00
Townsend, T. B.....	155	10	50.00
Vick, Jos.....	285	10	50.00
Vick, Jos.....	293	5	25.00
Vain, Matthew.....	161	5	25.00
Wilcox, C. H.....	292	5	25.00
Wyckoff, J. L.....	274	10	50.00
Williams, Samuel.....	280	5	25.00
Williamson, John.....	300, 318, 319	35	175.00
Wilson, D. G.....	333, 360 5-a	25	125.00
Wilson, D. G.....	375	5	25.00
Wakle, C. H.....	unissued	35	175.00
York, E. M.....	60, 61 2-a	4	20.00
York, E. M.....	62	4	20.00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the saleroom of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the third day of June, 1867, at the hour of 12 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. G. WOOD, Secretary.

Office, 333 Montgomery street, San Francisco. my11

#### I. X. L. Gold and Silver Mining Company.—Location: Silver Mountain District, Alpine County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of April, 1867, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, in the store of J. O. Wood & Co., 418 and 419 Clay street, San Francisco, Cal., or to John G. Slaven, Superintendent, at Silver Mountain.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. B. STEVENS, Secretary.

Office, 418 and 420 Clay street. my11

#### Lady Franklin Gold and Silver Mining Company.—Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1867, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 305 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. S. LUTY, Secretary.

Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. my4

#### Lyon Mill and Milling Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of May, 1867, an assessment of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

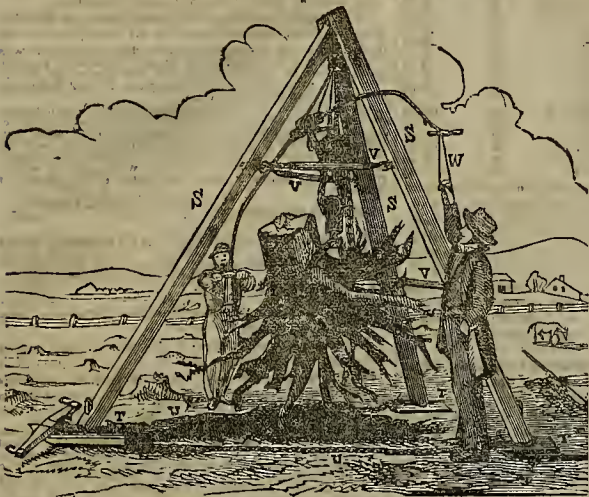
Any stock upon which said assessment shall remain unpaid on the seventh day of June, 1867, will be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, No. 5 Government House, corner of Washington and Sansome streets. my11



## Crawford's Stump and Rock Extractor and Elevator.



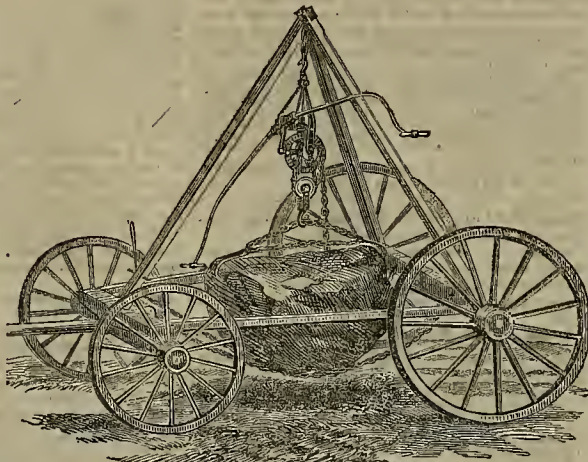
STUMP AND SNAG PULLER.

PRICE OF MACHINES:—No. 1, 10 tons, \$200; No. 2, 15 tons, \$275; No. 3, 20 tons, \$350. Small Model Machines—weight 30 pounds—lift 1 1/2 to 2 tons, \$75; other sizes to order.

These Machines are adapted to all kinds of work, and where labor is scarce they are invaluable. Two men can work the machine. A few of their uses are: Loading boilers, granite, heavy ordnance in casemate, or any heavy body. For mountain teamsters they are of great value, lifting wagons, etc., clearing lands of stumps, moving boulders for miners, or for railway companies. There is scarcely any work of moving heavy bodies which they are not adapted to. Single Machines, or Right of City or County, and all information can be obtained by letter, or otherwise, by application to San Francisco, April 17, 1887.

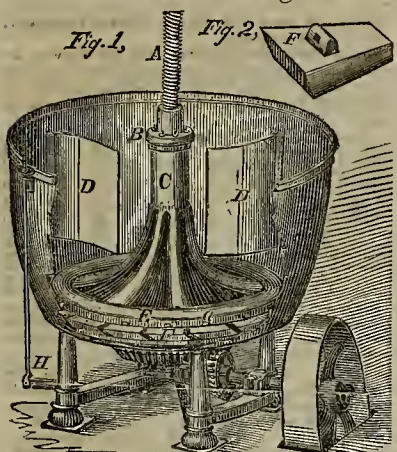
[16v14coulm]

GRUB AND ROCK EXTRACTOR.



Office California Steam Navigation Company.

### STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



Is the Cheapest and Quickest Pan Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. 2. Is the muller plate; 3. The Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

3v11t

**VARNEY'S  
PATENT AMALGAMATOR.**  
These Machines Stand Unrivaled.  
For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.  
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.  
This Amalgamator Operates as Follows:  
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.  
Setters made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.  
Mill men are invited to examine these pans and setters for themselves, at the  
PACIFIC FOUNDRY,  
San Francisco.

**To Quartz Miners and Others.**  
NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**  
It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.  
In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

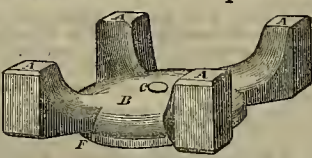
1v143m JAMES HITCHENS.

**To the Mining Community.**

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 551 Harrison street, San Francisco.

16v14gr WILLIAM WILLIAMS,  
Practical Mining Engineer.

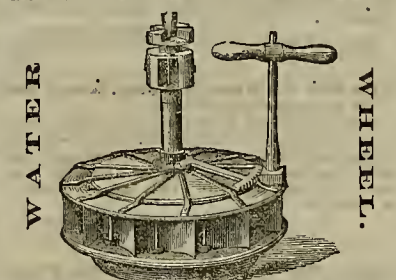
### Hooker's Patent Pump Valve.



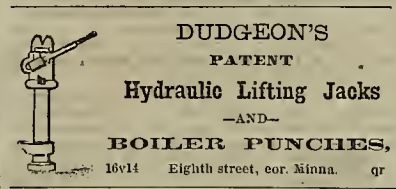
A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the india rubber facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C.  
The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.  
Rights for the use or manufacture of this Valve, are for sale by  
V. CUSHING,  
120 Front street, San Francisco.

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public. See illustration and description of this Pump, published every other week in this paper.

### LEFFEL'S American Double Turbine



THESE WHEELS, UNEQUALED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.  
CALIFORNIA REPRESENTS:—E. Stetson, Polson; O. Simmons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McMillan, Lexington Santa Clara County. Send for Circular to  
KNAPP & GRANT,  
Agents for California,  
310 Washington street, San Francisco



16v14 Eighth street, cor. Minna. gr

### QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

### First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.  
Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or  
J. B. HITCHCOCK,  
Millwright, Russ House.

### Notice to Miners, Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

8v13-1y Store Store, No. 123 Clay street, below Davis.

### FOR SALE!

**PATENT RIGHT OF  
HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to  
E. O. HUNT,  
23 SECOND STREET,  
11v24 San Francisco.

### Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

### PICKERING'S GOVERNORS

For Steam Engines.

### Giffard's Injectors,

For Feeding Boilers.

### STODDART'S IRON WORKS,

Beale Street, San Francisco.

23v12 3m

### BLAKE'S QUARTZ BREAKER! PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—

### WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077

3v13f SAN FRANCISCO.

### STRONG & CO'S CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
2v13 G. W. STRONG, Assayer.

### NELSON & DOBLE,

AGENTS FOR:

**Thomas Firth & Sons' Cast Steel, Files,**  
Etc., Shear, Spring, German, Flow, Blister and Toe Calk Steel; manufacturers of

**Mill Picks, Sledges, Hammers, Picks,**  
Stone Cutters, Blacksmiths' and Horse-Shoers' Tools,  
319 and 321 Pine Street,  
Between Montgomery and Sansome, San Francisco.

### V. CUSHING, Agent

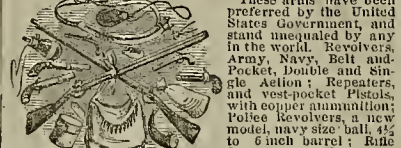
For the Purchase and Shipping of Machinery OF ALL KINDS.

ESPECIAL ATTENTION GIVEN TO QUARTZ MILL Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco.

### REMINGTON'S ARMOY.

Agency, 310 Washington st., San Francisco.

### PRICES REDUCED!



These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition. Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Cases—an entirely new

Arm—having a range and accuracy equal to a rifle, and no most perfect Game. All the new models for sale very low.

12v13ft ALBERT E. CRANE.

[Written for the Mining and Scientific Press.]

### Markleeville Correspondence.

MARKLEEVILLE, May 4th, 1887.

### THE RECENT STRIKE AT THE TARSHISH MINE.

EDITORS PRESS: I have ever made it a point to write when the "spirit moves," and now as the snow has nearly all moved off our valleys and hills, and all vegetation is on the move, and travel is beginning to move through our county, and everybody is on the move to get "feet." In the vicinity of the Tarshish mine, at Monitor, I have concluded to have my pen move, and give you and your readers a little idea of what is going on in our county.

Several weeks ago the Schenectady Company struck a very rich ledge in the Tarshish claim at Monitor. The news was telegraphed to the daily papers, and you have doubtless seen notices in our county papers. Well, the news sped away faster than the "wings of the wind," and did, at that time and ever since, create some excitement in this county and elsewhere.

As soon as the ledge was struck, and an assay or two made, the superintendent had the work suspended till a dump could be built, and then in one day, on resuming work, something like a ton of good ore was got out and sacked; and in a very few days a number of tons were taken out and shipped to the Ophir mill in Washoe Valley, to be worked. Early this week the result was telegraphed to this county, and a grand ball gotten up in honor of Monitor's first brick. This ball came off last night at Monitor. As the brick was expected up on yesterday's stage, many bent their steps in the direction of the scene of war. The superintendent, Mr. Wilson, and the assayer, Mr. Graff, both went down with the ore and stayed with it till the silver brick was brought into existence, and both returned by stage yesterday, bringing the bullion with them. Quite a crowd had gathered at the stage office in Monitor when the stage arrived, and no sooner had the passengers got out, and the brick been brought to light, than three rousing cheers were given for Mr. Wilson, the superintendent, Mr. Graff, the assayer, and Monitor and her first silver brick.

The amount of ore taken down was some four and a half tons, but some of that was used to experiment with at the mill, and when it was discovered how it was best to work it, 7,000 pounds of dry ore was worked by the Freiberg process, and yielded an enormous brick. I copied the lettering on the bullion which I here give you: "Tarshish mine, No. 2,632, Van Wick & Co. assayers, Gold Hill, Nev., \$39.80 ozs.; gold, 0.16 fine; silver, 853 fine; gold, \$277.74; silver, \$926.18; total, \$1,203.92." So you will see the first effort from this mine proved a perfect success, the ore working over \$300 per ton.

Let it no longer be said that Alpine county has no mines; but on the contrary, had these mines been at such a distance from civilization that it had required a trip at sea in order to see, or had they been so far out on some sage brush desert that it would have been a weary and toilsome journey to have reached them, and after having arrived there, a man's eyes would have got so full of sand in ten minutes that he could not see a barn ten feet away, and the alkali water was killing off the cows, and everybody was sick. I say had all these difficulties been in the way, these mines would have been developed, and tons of bullion shipped monthly, for several years past. But no! Alpine county is unfortunately in California, and there can be no silver mines outside of Nevada or Arizona! But we propose to change the programme before the close of the present year, and show all the world and everybody else, that our county is destined to be the richest one in the State.

But I must return to my subject. Moved by the little stir and excitement, I made it my business to move when the spirit moves, and found myself at Monitor with the crowd yesterday. The silver bar was handled and talked over more than Mother Eve's first born, and if the folks have not quit it, the same thing is going on still.

The ball commenced rolling about eight o'clock, and the big silver brick was placed on the musicstand, as though the musicians were playing, or the dancers were dancing to the tune of "twelve hundred."

### A VISIT TO THE MINE.

At early dawn to-day, I left the sleepy headed and light-heeled, joyous crowd, and



began ascending the mountain by the zigzag trail leading to the Tarshish, and in due time I reached the mouth of the tunnel, where I got a candle and after groping my way 535 feet through a dark and narrow pass, with many dangers overhead, I arrived at the fountain-head of wealth, 300 feet below the surface of the earth. I profess to be a miner, and think I know something about ledges and wall rocks, and although I had heard many opinions expressed about this ledge, I must say that I was well pleased with the appearance of the body of ore that has already been brought to light. The tunnel cuts the ledge at nearly right angles, and has gone into it some sixteen feet sure, and there is no prospect yet of getting through. The richest ore lies in pockets, but those are not like the visits of angels. They are quite plentiful, and the entire ledge will doubtless pay exceedingly well, while the best ore will pay enormously.

I send you by mail to-day a sample of the good ore, but not as good as some I have seen. The company has suspended operations on the mine for the present, and are grading and preparing to build a large ore-house. More anon. SIRROM.

**STILL ANOTHER NEW TEXTILE.**—The New Orleans Academy of Science has recently listened to a paper descriptive of the new textile plant called "ramie." The sample shown was raised in Mexico by Don Benito Roedel, formerly at the head of the Horticultural Institute of Belgium. The fiber is said to be remarkably fine and silky, and from two to three feet in length, nearly as white as cotton in its natural state, fifty per cent. stronger than either flax or cotton, and far more productive than either. But few hands are required to raise this new plant, and it yields four or five crops per year, and is particularly suited to the soil and climate of Louisiana, Florida, Alabama and Texas. It is grown like cane, and is planted in lengths from the stubble.

**A Paying Newspaper for Sale.**

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quariz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press; or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v14lf

**WOODWARD'S GARDENS!**

**MUSEUM,**  
Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

**Open Every Day!**

**ADMISSION:**  
To all parts of the Garden.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
These Gardens are accessible by the Howard, Folsom and Market street Cars.  
Schools and Charitable Institutions, accompanied by guardiana, free on Mondays and Fridays. 23v13qr

**HAYWARD, COLEMAN & CO.,**

IMPORTERS AND REFINERS

**Illuminating, Lubricating, AND PAINT OILS!**

CONSISTING OF  
KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

**SPIRITS OF TURPENTINE & ALCOHOL**

Note.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**

An elegant and complete assortment on hand.—Ed 1v13-3ml9 414 Front street, San Francisco.

**California Steam Navigation COMPANY.**

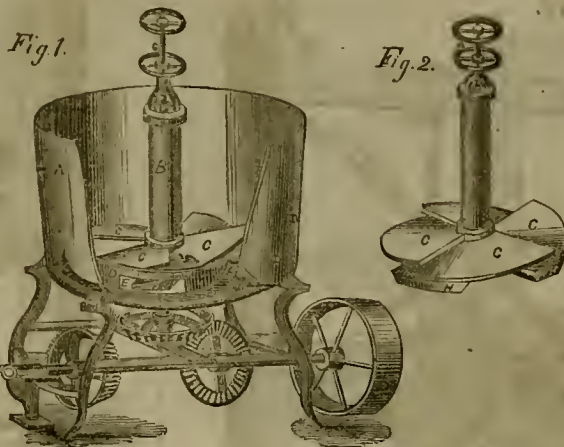
Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P.M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.  
Office of the Company, northeast corner of Front and Jackson streets.

**JOHN BENCHLEY,**  
President.

**Gaston's Screw Grinder and Amalgamator**

—13—  
The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequaled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and Fig. 2 the screw muller, and its shoes. The letters show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immenso pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

Stair Work of all kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.



Newel Posts and Balusters  
CONSTANTLY  
On Hand and for Sale.



**THE CELEBRATED Self Generating Portable Gas Lamp.**  
This extraordinary Lamp produces its own gas by the vaporization of Petroleum, kerosene, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivalled, burning with undiminished brilliancy in a strong wind.

**Directions for Use.**  
Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to generate the gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.  
A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the top off, it will gradually go out.  
When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed up with a little white lead, and the lamp is ready for use.  
Manufactured solely by JOHN A. HUCKS, original proprietor, Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State. 15v14-3m

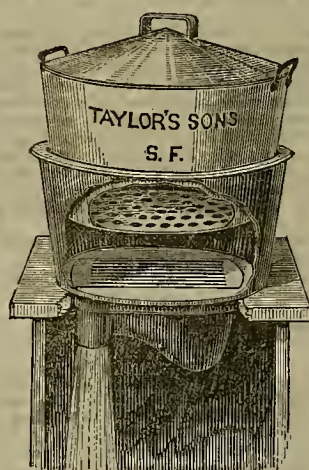
**Pratt's Abolition Oil.**

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Grains and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and 25 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 534 Sacramento street, opposite Whit Cheer House, San Francisco. 15v11-ly

**Mechanical Drawings.**

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

**HEALTH! HEALTH!**



To prevent this, purchase one of  
**Taylor's Stench Traps and Garbage Baskets,**

And promote the health, comfort and cleanliness of your family. [For description see Mining and Scientific Press, April 6, 1897.] Sold wholesale and retail by TAYLOR & SONS, at No. 429 Pacific street, San Francisco. 15v14lf

**SAN FRANCISCO BRUSH FACTORY,**

No. 211 California st., manufactures to order all kinds of  
**BRUSHES,**

At lower prices than cost of Eastern importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fiber; also, Stucco Brushes from the same material. The Patent Ruston, Street, Stable, Fine and Flame Brush, for which they have the exclusive right for the Pacific Coast.  
All orders from the Interior promptly executed.  
FELDMAN, SIMPSON & CO., Proprietors. 15v11qr.

**ROWLAND, WALKER & CO.,**

**GROCERS,**

Nos. 516 and 518 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.

Goods delivered at any point within the city limits. 22v13-ly

**Portable Steam Engines!**

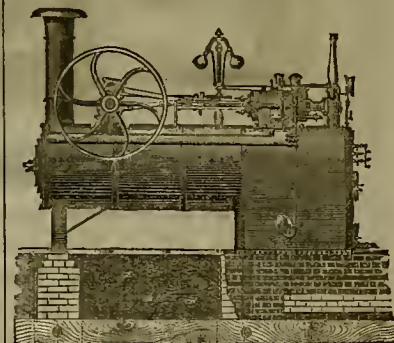
"Hoadley's" and "Hittinger's" Make,



**HOADLEY'S.**

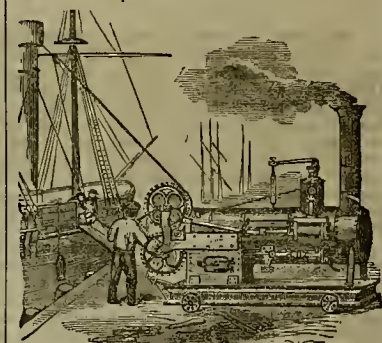
**FOUR SIZES,**

8, 10, 12, and 15-Horse Power,



**HOADLEY'S.**

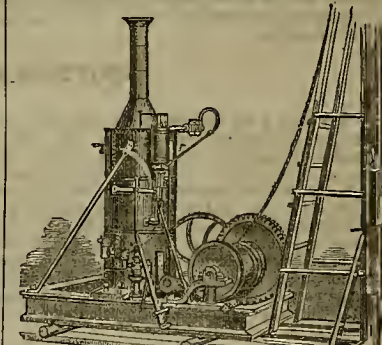
3 to 40-Horse Power.



**HITTINGER'S.**

**THREE SIZES,**

5, 7, and 10-Horse Power



**HITTINGER'S.**

**TWO SIZES,**

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.  
Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels, to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

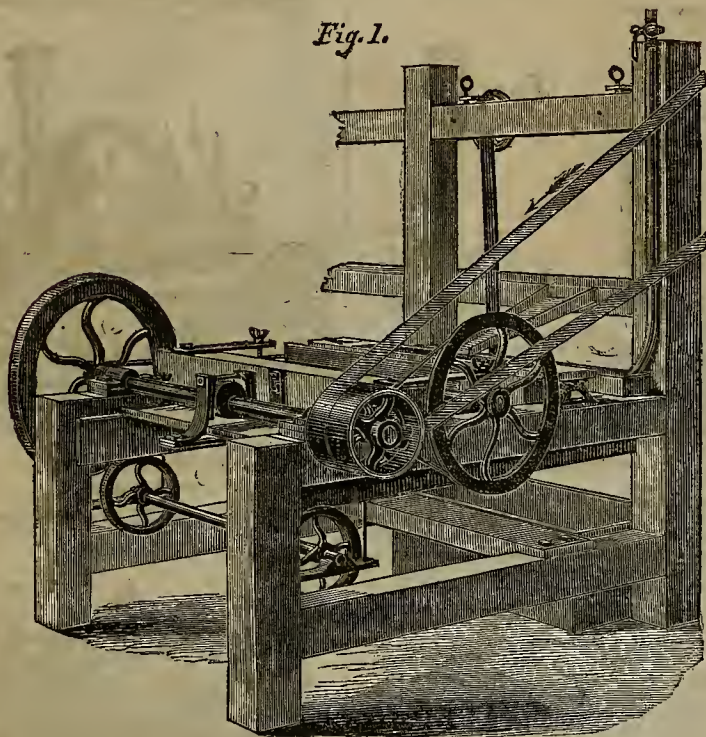
All sizes on hand from 3 to 30 horse power, with and without carriages.  
Also, Portable Saw and Grist Mills.

For sale by **TREADWELL & CO.,**  
Corner of Front and Market streets. 9v14-6ml5p



## HUNTER'S IMPROVED CONCENTRATOR.

Fig. 1.



The Patentee of the above Machine, has the utmost confidence in offering to the mining public, a Concentrator that in every respect meets with the wants of the Pacific Coast. From his experience of four years experimenting on the separation of sulphurets, he does not hesitate to give the strictest guarantee, and will refund the money if they will not perform what he claims for them.

## CONSTRUCTION.

The above illustration, gives a correct view of his improved Concentrator. The tables at the back end are suspended on iron hangers; the front or lower end rests on iron rollers. The tables weigh about 30lbs., and vibrato by the slightest touch, (the original tables weighed over 100lbs.) The lower end of the table strikes against spring steel fastened to the cross bar, and produces the percussion that moves the sulphurets over the high end; the sand and water passes off in front. The Scraper revolves and assists to move the sand off the table. The Feed Trough rests on rockers, on the frame, and is moved by a crank pin in the end of the driving shaft; the water trough also rests on the frame, doing away with all unnecessary weight on the table. The driving shaft is placed in front of the tables, giving free access to adjust the machine. The tables are set in motion by the eccentrics running in cast steel straps, giving a perfectly free vibration. The fourth of a horse power will run twenty tables; each table will work from three to five tons in twenty-four hours, saving from 80 to 90 per cent. of the metal contained in the ore.

Hunter's Concentrator, was exhibited at the Mechanics Fair in 1865, and received the first premium, a silver medal, over his competitor, the Prater Concentrator, as exhibited by Mr. Hendy.

In 1865 and 1866 the patentee sold and put in a number of Concentrators at Grass Valley, that were afterwards thrown out, to make room for a base counterfeit, in imitation of the above machines, and for the purpose of avoiding paying for those contracted for, which proves how easily one of the best improvements on this coast can be blasted by an unscrupulous and unprincipled superintendent. The above explanation will show why the machines were thrown out. The annexed certificate proves the appreciation that others have of his machines, and the following proposition proves the confidence of the inventor. The patentee is prepared to test against any Rocker or Concentrator built on this coast, and guarantees 20 per cent. better results than from either; (it is immaterial how many certificates of merit said Concentrators can produce). The sulphurets, when concentrated, must contain less than 3 per cent. of sand.

The patentee is prepared to take contracts for concentrating gold, silver, galena, tin, copper and cinnabar ores, on shares, receiving a certain per cent. of the sulphurets as shall be agreed upon; or he is prepared to put them up in mills under his directions, and guarantees to save from 80 to 90 per cent. of the sulphurets.

## OPERATION.

The sand is run into grading boxes—three different grades can be obtained. Each grade—the coarse, the medium and fine—are run on to tables adjusted for each particular grade. The sand runs continuously into the distributing trough, and is fed near the centre of the table. The hind end of the tables are about half an inch higher than the front. By the percussion blow the current is checked, and the sulphurets, however finely crushed, are thrown down by the sudden check, and pass below the surface of the sand on the table, where they are protected from the action of the water, and gradually move from the point where the blow is given, producing a continuous discharge of the sulphurets into a box prepared to receive them, thereby saving the finest particles of metal that would float in the water, which by the centrifugal force, or the ordinary means of saving them, are wasted; the short, quick motion and percussion produces trituration sufficient to amalgamate the finest particles of gold on the plates of the table also for collecting the floured quicksilver and fine particles of amalgam. The sand is held in suspension and floats off with the water, assisted by the motion of the scraper.

The machines, as they are now constructed, require scarcely any attention to run them: two or three tables can be built in one frame, using one shaft and one belt to drive them. The Concentrators are so constructed that there is no possibility for them to shake to pieces. The tables are so light that the slightest blow produces the necessary vibration, therefore obviating the objections that many had to the original tables. For working heavily sulphurated silver ores, concentrate in front of the battery, then pass the sand into a revolving screen of six thousand meshes to the square inch; the slum and water pass through and is then run into a reservoir, and allowed to settle before drawing off the water; treat the sulphurets and slum as the character of either may require, thereby obviating the roasting, or treating the rocky portion by fire process, and extracting as high a per cent. as is now obtained, and for less than one half of the present cost. For working cinnabar ore of a low grade crush and concentrate the sulphurets of mercury, and use the ordinary retort for silver ore; the cost for crushing, concentrating and retorting, is much cheaper than using the ordinary furnace; from experiments recently made the results were the most satisfactory, and for all classes of sulphurets for shipping they will contain less than three per cent. of sand.

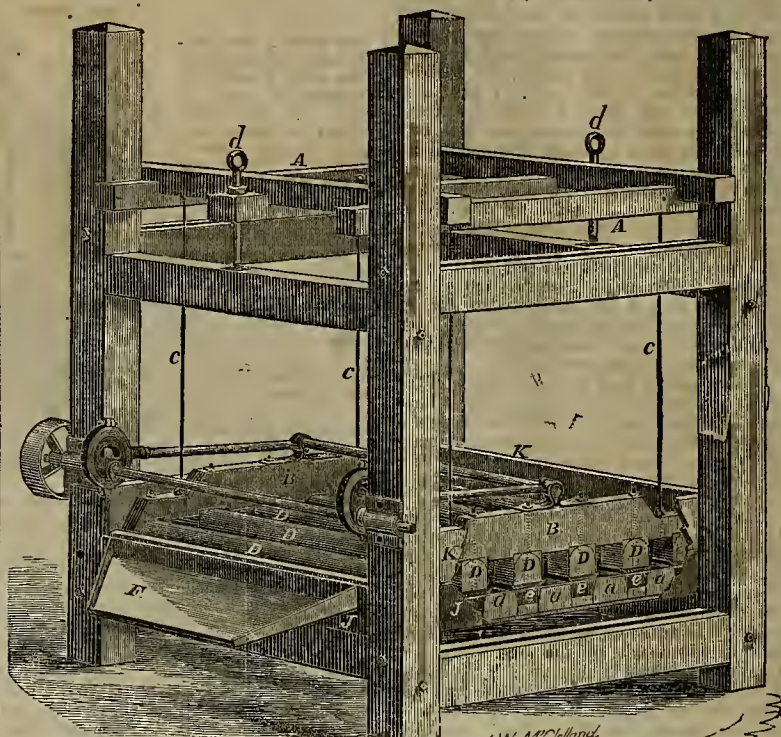
ORIENTAL MILL, WISCONSIN HILL, May 3d, 1867.

A. HUNTER, Esq., San Francisco.—Dear Sir:—The four concentrating tables recently put up in the Oriental Mill work to my entire satisfaction for saving the sulphurets; also the fine gold and quicksilver that escapes from the battery. The four tables will work about fifteen tons in twenty-four hours, and perform all you claim for them.

Yours,

D. S. HOSMER, Supt. Oriental Mill.

## HUNTER'S PATENT EUREKA AMALGAMATOR.



I beg to submit to mill men, and parties operating in gold and silver mines, for their consideration, one of the best improvements ever offered for saving the fine float gold that is wasted by the present process; also, for reducing the sands as they pass from the battery. Each machine will work below a five stamp battery.

## CONSTRUCTION.

The machines now used are four feet eight inches square on the bottom. The pan J is made of cast or boiler iron (for continuous working), seven inches deep; the sides are lined with wood, K, one foot deep, with inside lining of copper plate. The bottom is covered with iron dies, E, four inches wide by one and a half inches thick, with strips of wood, a, a, a, alternately set on end; the rubbers D are made of wood 4 inches wide by 3 3/4 inches thick, bolted to cross piece B; the upper part of the rubbers are rounded and covered with copper plates; the bottoms are shod with iron; the discharge end F is level with the top of the rubbers; two machines are built in one frame, giving a reverse d movement, preventing any jar on the machine. One shaft and one pulley and belt run both machines. The rubber frame B is suspended by iron hangers, C, to top frame A, and adjusted by screws d.

## OPERATION.

By means of the shaft and eccentrics the rubbers are set in motion; the shaft revolves sixty times per minute, or 120 movements of the rubbers. As the rubbers pass from, a current is formed by the pulp passing over them, forcing the heavy sand under them, and as the rubbers return the heavy sand is met by the opposite current, and kept there until crushed by the force and weight of the rubbers; the gold is amalgamated on the plates, and the fine particles of mercury that escape from the battery are collected in the machine; there is no packing of sand in the machine when the mill stops, therefore requiring no attention to run them (only for oiling). For working by charges, as a grinder and amalgamator, the sides of the box are 18 in. deep, sufficient to hold 12 cwt. at a charge, and arranged with a steam chest at the end for heating the pulp. Also the same machine, when used as a settler, has given the most satisfactory results, the motion and movement having a tendency to collect the quicksilver into its original state; for using them as a settler if built of wood they can be built for a small price in the mill; all that is required for their success is to give them a trial.

## ADVANTAGES.

The advantages claimed by the patentee are—1st, the cost is less than one half of other Amalgamators; 2d, it requires about the fourth of a horse power to run one machine; 3d, they only weigh from 15 to 20 hundred pounds; 4th, they do not waste quicksilver, but have a tendency to collect that which is wasted from the battery; 5th, they can be placed in any mill without any additional expense for power.

There are five of the above machines now running in the Eureka Mill, Grass Valley, where they can be seen in operation; also two at the Pittsburg Mill, Nevada City. The following order I received from Wm. Watt, Esq.: "After a trial of two weeks of your Eureka Amalgamator we have cleaned up and found it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries; we run through it all the pulp that passed over the blankets from 5 stamps. I am highly pleased with it, and I think it is the best machine after blankets or plates I ever saw. It reduces the coarse particles of sand, and makes the pulp more uniform in size, and requires very little power to run it. But the best recommendation I can give it is, that I want four more. Will you please go to the Vulcan Foundry and order them."

Price of the Eureka Amalgamator, two machines built in one frame,.....\$250 each.

Price of Hunter's Improved Concentrators, two tables built in one frame,.....\$150 each.

The above machines can be seen in operation at the Union Foundry from 1 to 2 o'clock, P. M. Orders addressed to the Union Foundry, the Vulcan Foundry, or the Fulton Foundry, will be promptly attended to. Parties wishing further information, will please address

ANDREW HUNTER, Patentee, Union Foundry,  
Or ALBERT MOORE, Agent, Fulton Foundry.

## HUNTER'S CEMENT AND GRAVEL WASHER,

For Washing Cement and Gravel, obviating the Crushing of the Cement and Gravel.

It is a cylinder of about twenty feet long, and three feet diameter. The under part or lower half is made of wood and lined with iron, leaving openings lengthwise of about a quarter of an inch wide, for the fine sand and gold to pass through into a bath of quicksilver underneath. The rock and gravel is discharged continuously at the lower end. The upper half of the cylinder is covered with sheet iron. It is supplied with water from a large water pipe on top, with discharge pipes every foot, securing an even supply the whole length of the cylinder. In the center, passing through the cylinder, is a large shaft with arms or teeth set every three inches in a spiral form. The teeth are made of wrought iron, faced with cast steel. It is claimed that one cylinder will work one hundred tons per day, using about ten horse power. The cost of a machine will be about one thousand dollars. A model of the above machine can be seen at the Union Foundry, San Francisco.



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DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JUNE 1, 1867.

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Number 23.

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**ACIDS AND CHEMICALS.**—We took occasion, several months ago, to notice the incorporation of the Golden City Chemical Works, and at that time called the attention of the public to some of the objects and aims of the association. In a recent visit to the laboratory, corner of Seventh and Townsend streets, we found the different departments of this extensive establishment fully equipped with the necessary machinery and apparatus for manufacturing sulphuric, muriatic and nitric acids, together with chemicals of all descriptions, not only in quantities sufficient for the wants of this coast, but in quality guaranteed to give entire satisfaction to the trade—the acids and other products from the Works being made chemically pure—while furnished at a little more than one-half the rate of the imported, which come to us so diluted, or are so deteriorated on the voyage from the East or European ports as to render them, in some instances, almost valueless, if not injurious.

It is well known that much of the wear and tear of amalgamating pans is caused by the use of sulphuric acid containing nitric and nitrous acids; that much of the European article being made from arsenical ores is unfit for use as a test for arsenic where life itself may depend upon a correct analysis, and that the sulphuric acid found in the market usually contains more or less of sulphate of lead, derived from the vessel in which it was prepared.

This acid at these Works is hoiled in glass instead of lead, is chemically pure, entirely free from the objections mentioned, and is to the eye clearer than the clearest crystal.

The sulphur is now mostly supplied from a mine belonging to the company, located in Colusa county, at about one-half the cost of that hitherto used.

The carboys for containing the acids—five thousand of which have been ordered from the Pacific Glass Works at the Potrero—are represented to be made of better glass, and to be superior in every respect, to those brought from the East.

**CALIFORNIA GRINDSTONES.**—Information concerning material for grindstones is desired by a party in this city. Any one who knows of the existence of a ledge of stone suitable for this purpose, in a convenient location on this coast, will do well to inform this office of the same without delay.

## Hunt's Globe Pump.

One of the most diligent and indefatigable inventors on the Pacific coast is Mr. E. O. Hunt, the proprietor of the well known machine shop and factory at No. 28 Jessie street, in this city. His is a veritable "old curiosity shop," which is well worth the while of the curious to call and see. He will show you horse-powers, windmills, pumps, cutting shears, rifle projectiles, improved pavements, etc., etc., almost without number, and all of his own invention and manufacture. We have already, in times past, illustrated several of his in-



ventions, and now add another, which he offers as an improved pump—a strong and durable machine for raising water by wind, steam or horse-power, and to any height desirable and commensurate with the power employed. This pump is quite extensively employed for raising water into tanks by wind power. He manufactures six sizes, with from three to eight-inch chambers. The pump is adapted to both shallow and deep wells. By having a chamber at the bottom of the well connected with a pipe, and a rod to connect with the plunger and to pass up through the pipe and globe to the level, water may be forced from any reasonable depth. These pumps have been in use for several years on this coast, and have given good satisfaction. They are fitted for iron pipes; their construction is very simple, and any needed repairs can be readily made.

The illustration herewith presented is one of the smaller size, designed to be placed upon the platform over a well and to be worked by hand. Power, however, can readily be attached when desirable. Hunt's windmills are well known throughout the central portion of the State. Great numbers of them are in operation, chiefly for pumping water, and in nearly all cases they are accompanied by some one of the various description of pumps which he manufactures.

## Petroleum Fuel for Steamers.

The recent inauguration of steam communication between this city and the ports of China and Japan, involving an ocean voyage of more than double the length of any heretofore attempted, without coaling stations, has exhibited, in a striking manner, the necessity for a more condensed fuel than that furnished by coal. Of course the hydrocarbons, in some one or more of their various forms, is the only source to which we can turn for this desideratum. Numerous experiments have been made by both our own and the English governments, and by private individuals of both nations, to devise a practical and economical mode for substituting either crude petroleum, or some of its resulting products, for coal. The advantage of a successful result to such experiments would be of inestimable value to the world; and the end sought may now be considered the great mechanical and scientific problem of the day.

The earlier experiments met with very little favor, either from scientific men or eminent engineers. Science labored to point out the impossibility of the thing; but it failed to stifle the inventive genius of the age, which has been now for several years actively engaged in efforts to bring the investigations to a successful issue. The progress which has been thus far made has effected a most marked change in the opinions of many who at first had no confidence whatever in the scheme. In fact, the successful accomplishment of the thing is now pretty generally considered a mere matter of time.

Two sets of experiments are just now attracting the attention of the world to their several efforts, both of which are full of promise. The first is that which originated with Col. Henry R. Foote, of Tennessee, and which is being put to practical test in Boston on the iron steamer *Palos*, a fourth-class gunboat. This experiment was commented on at considerable length in the *Bulletin* of this city, of the 28th ult. The apparatus consists of a small iron box, or retort, in place of grate bars, into which the oil (petroleum) is carried by a small iron pipe, and vaporized immediately on its entrance. Decomposed or superheated steam is also carried into the box, into which air is at the same time forced; the whole forming a mixed gas, which escapes from the retort through some nine hundred burners, more or less. It is said to burn with a clear, intense blue flame, completely filling the furnace and flues, or tubes.

### ANOTHER PLAN.

Very much the same thing as the above, is being accomplished in England by Messrs. Wise, Field & Aydon, who are able to burn even the waste of gas houses and oil refineries, and who might also use the crudest of our natural California oils. The *London Mining Journal*, speaking of one of their recent trials, says:

The plan is very simple, and most effective. The oil is allowed to fall through a narrow orifice in a continuous stream (in

the present case the worst kind of creosote refuse was used) about one-eighth of an inch in diameter, or, in other words, flowing at the rate of about three gallons per hour. As the oil falls vertically, it is met by a superheated steam-jet, which blows the oil in a cloud of spray against hot tiles and lime on a coal grate, a coal fire being first used to get up steam for the superheated blast. The apparatus was fitted to the furnace of a Cornish boiler, and, with the consumption of oil stated above, the steam was maintained at a pressure of from 32 pounds to 35 pounds per square inch, and keeping going the engines usually worked by the boiler with the furnace burning coal. The amount of water evaporated was ten cubic feet per hour for 100 square feet of surface of boiler.

The cost of the material used in these experiments is from \$7.20 to \$12 per ton in England. Crude petroleum can be delivered in this city, by the quantity, for about \$24 per ton, or less than eight cents per gallon, as soon as a demand exists sufficient to warrant the construction of wharves and suitable vessels for the business, so as to do away with the costly use of barrels. The English experiments, with a material inferior to our crude oils, cost twelve cents per hour; the same work costs, with the best Auldare coal, thirteen and three-fourths cents per hour. In the absence of actual experiments it would be impossible to determine the exact superiority of our crude oils over the material used in the English experiments.

In the English experiments, taking petroleum at eight cents per gallon, the fires could have been maintained at the rate of twenty-four cents per hour. There were present at the experiments Prof. Abel, Mr. Frederick Field, F.R.S., Mr. D. K. Clark, C.E., Mr. Campbell (of Messrs. J. Brown & Co.), Mr. Edward Field, C.E., Mr. Aydon, C.E., Mr. Hugh Barclay, Mr. A. Shanks, C.E., Mr. Wm. Lloyd Wise, Mr. Hope, and others.

**COMMENCEMENT EXERCISES.**—The fourth annual commencement exercises of the College of California, at Oakland, will take place on Wednesday next, June 5th. The annual address will be delivered by Rev. A. L. Stone, D.D., and the poem by Frank Bret Harte, Esq. The customary associated *Alumni* supper, with interesting and attractive speaking, will come off in the evening. This association is intended to embrace all college and professional graduates on the Pacific coast. Its annual gatherings have already established for it a reputation for excellence and interest which is well known throughout the State. It is to be hoped that all who can, will prove their interest in its success by their presence at its approaching annual festival.

**CHALK MOUNTAIN.**—Mr. Buffington, Secretary of the Chalk Mountain Blue Gravel Co., has exhibited to us a sample of coarse gold, amounting to \$1.50, washed from three pans of dirt from the company's claims, by the Superintendent, S. N. Stranahan. It was from hydraulic ground, which the company intend to commence piping soon.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

(Written for the Mining and Scientific Press.)

## The Reese River Country and its Mines.

BY A. J. HOWE.

(Continued from Page 322.)

## PARADISE DISTRICT.

Fourteen miles further south we come to Paradise District, similar in many respects to the one we have just left, but situated several hundred feet higher. Here, again, we find twenty-five or thirty large lodes almost totally undeveloped, many of which produce very rich ore at the croppings. Like Last Chance, the district is owned by one company, residents of Ellsworth, in Mammoth District. There can be no doubt with regard to the value of this property, if in the hands of a company that controlled means to properly develop it and erect reduction works. The country rock here is of granite and syenite. Several of the lodes show remarkably rich copper ores, while the same is said to assay as high as \$230 per ton in silver. Thirty miles further south brings us to

## VOLCANO DISTRICT.

This is one of the most interesting sections of Central Nevada. With its gold, silver, copper, lead and quicksilver, Volcano can scarcely fail of attracting capital at an early day. The district was discovered and organized by Samuel McKean and others, from Mammoth, early in the spring of 1865. Their attention was first attracted by an immense lode of reddish-looking substance, which was suspected by the party to be cinabar. Specimens were taken to Austin, and by numerous tests yielded quicksilver, some portions of it from the croppings as high as six per cent. A company was immediately organized, and a shaft sunk 170 feet. It appears this shaft did not follow the direction of the lode, consequently the ore at that depth is yet untested. Lying higher up the mountain, in limestone, are numerous large veins of copper, showing all the varieties and combinations, from the beautiful green and blue carbonates, peacock and bronze ores, to the rich red oxides, yielding eighty per cent. Other veins produce ores that assay up in the hundreds in silver, and again lodes of argentiferous galena occur, which are also rich in free gold. Smelting works have been erected five miles further south, the result of which I am now unable to give. Almost chemically pure brimstone is found herein abundance, while vast beds of salt are found in the valleys. Coal has been discovered by the Quicksilver Company, which they claim to have used in sharpening their tools.

The most interesting portion of Volcano is its vast bed of marine fossils which occur here. These fossils are found in great variety, from the minute bivalve to the huge coiled ammonite, or serpent fossil, three feet in diameter. Here we also find the most beautiful wood petrifications, translucent and delicately tinted with pink, yellow, jet black and pearl white. The fracture, when broken in any direction, is as glossy and smooth as the highest polished marble; the rings of annual growth, knots and bark are left distinct and perfect. Even the pitch that once oozed from the tree is found in pendant, pearly drops of veritable amber, clinging in the cavities of the trunk. These trees were undoubtedly a variety of pine which is now extinct.

Volumes might be written of this interesting region, and the reader taken through a continuous succession of mining districts, all rich in gold, as we approach the Sierra Nevada; but neither belonging to the object implied by the heading of these letters, I will merely mention by names the famous gold region of Willson's District, on East Walker river, thirty miles west of Volcano, and Pilot and Columbus Districts, situated the same distance south.

We will now pass from the Mammoth

mountains, southeasterly, over the dry sage-covered and sandy plains fifty-five or sixty miles, to Silver Peak, which we find in a broken range of mountains directly south of the southern extremity of the Toiyabe.

## SILVER PEAK DISTRICT.

In the winter of 1864-5, two brothers, named Robinson, and their neighbor, Smith, who then occupied and still own the meadow land in Smoky Valley lying opposite Ophir Cañon, visited this region with ox teams for the purpose of procuring salt for the mills at Austin. While on the mountain southwest of the great salt deposits, their attention was attracted by large quantities of extremely rich float quartz, lying on the hillside. This they followed up, and discovered the Vanderbilt lode. They loaded their teams with this surface ore and started for the nearest mill, which was 130 miles distant (Austin). The average lot yielded \$180 per ton. This created considerable excitement, inducing the thorough exploration of the southeastern portion of Nye county, which has resulted in the discovery of the wonderfully rich districts of Silver Bend, Northumberland, Danville, Moray, Hot Creek, Empire, Milk Springs, Revville, etc., the reported richness of which must stagger the most credulous; nevertheless they are true, and not overdrawn. The Robinsons soon sold their mine for a large sum, and early in the spring the old mill then standing at Jacobsville, near Austin, was removed by Mr. S. B. Martin to this district. Its ten stamps were very soon put in operation, and for a short time turned out large quantities of bullion; but the mill being constructed for wet crushing, and the company having no facilities for roasting the ore, they found that more silver was lost in the operation than saved, consequently the mill was closed. Arrangements were subsequently effected at the East, by the organization of the Great Salt Basin Company, for operations on a magnificent scale, and are now in progress, among which is the construction of a 40-stamp mill. This company, I believe, own the greater number of the lodes here that were found subsequent to the Vanderbilt, the most valuable of which appear to be the Pocastello and Sisson. A few miles west is situated Red Mountain, famous for its gold mines. Here a small mill of three stamps has been in successful operation since May, 1865. This property has recently come into the possession of the Great Salt Basin Company, and will be worked in connection with their silver mines at Silver Peak. The ore can be taken to the mill at the latter place by cars (tramway) with the greatest facility. The general formation of this, as well as Silver Peak District, is of black and grayish slate, while in the vicinity of the mines at the latter place belts of limestone occur, in which are imbedded marine fossils in considerable variety. The growth of timber in these mountains is not so large, nor near so abundant, as in those further north.

South and southeast of Silver Peak, along the borders of the dreaded and unknown Death Valley, a few hardy pioneers have explored sufficiently to determine the existence of a vast extent of country filled with gold and silver lodes. The tide of prospectors is setting that way, and during the coming spring and summer scores of new districts will undoubtedly be opened. Nearer Silver Peak, in a southeastern direction, a number of very rich gold districts were discovered, and to a slight extent developed. Of these I will give a description in a future letter.

We will now return north along the east slope of the Toiyabe Range. Thirty miles north we reach

## SAN ANTONIO DISTRICT.

This is about ninety miles directly south of Austin, and is located in a low detached range of mountains, which is moderately supplied with wood, in places quite abundantly as at Indian Springs, a few miles north of the mines. This district was discovered in 1863, and has in former times been considered among the richest districts of the Reese River region. Until the discovery of Hot Creek, the richest specimens of horn silver invariably came from here. The ore in many of the lodes is beautifully variegated with green and blue carbonates, while at the same time it is immensely rich in chloride of silver at the surface. The horn silver occurs lower, in thin leaves or films lining the seams. The formation is, to a great extent, slate—narrow belts or dikes of a porphyritic formation are intruded.

At Indian Springs, a 10-stamp mill was completed in January, 1866. It ran for a short time on ores from the mines ten miles south; but it seems to have been, like all the earlier built mills of this region, put up before the mines were sufficiently opened

to keep it steadily running. Taking our way northward, over dry and somewhat sandy sage-covered plains, fifteen miles brings us opposite the southern extremity of the Toiyabe range. Following Smoky Valley along the east base thirty miles north of San Antonio, we reach the mouth of Ophir Cañon, in Twin River District; before reaching which we pass several mining districts, the first of which is Hot Springs, ten miles south of Ophir, and the next is South Twin River, five miles south of Ophir and adjoining the original Twin River District. These are so little developed that we will not give them mention at present.

(To be Continued.)

## Facts About Patent Matters.

## NUMBER ONE.

It has long since become an acknowledged fact that no nation has made such rapid progress in improvements in labor-saving machines as our own; and more especially in this true of agricultural implements. The fame of our reapers, threshers, etc., has become world wide; and the value of these and similar inventions to our own people is beyond the power of any man to estimate. The great bulk of these improvements have been made within the last twenty-five years, and their progress has been constantly accelerated, increasing annually in arithmetical ratio; and as nearly or quite all these improvements or inventions are connected more or less directly with patents, it is equally important that the public should know somewhat of patents—what they are, how they originated, to whom and for what granted, which valuable, and which not, how to obtain them, etc.; and it is for the purpose of furnishing the numerous readers and inventors with this information (as fully as can be in so brief a space) that these letters were written. And now let us inquire in the first place—

## WHAT IS A PATENT.

The word patent means open, or to open—hence Letters Patent, open letters—open to the public, to make public, make known; as, when we say a fact is patent, we mean it is known publicly or generally, inferring that everybody knows it. A Patent, or Letters Patent, is a document given by the proper authorities, granting some exclusive privilege or right, to a particular person or persons. In Great Britain, lands, franchises, degrees of nobility, etc., are conferred by the Monarch by granting Letters Patent. With us, however, our laws wisely forbidding the establishment of a nobility, etc., the meaning of the term is confined to the granting by the government of the exclusive right, for a term of years, to make and sell any "new and useful art, machine, manufacture or composition of matter," invented by the applicant, and not before known or used by others. Having thus briefly stated what a patent is, our next inquiry will naturally be as to the

## ORIGIN OF PATENTS.

Patents are known only to civilized nations, and unknown outside of Europe and America. They owe their origin entirely to statutory law, being unknown to the common law. England appears to have been the first to adopt the wise system of stimulating invention by the creation of a patent law, it having existed there for at least 200 years. France and our own country adopted it simultaneously, a short time prior to the beginning of the eighteenth century. And here it may not be amiss to add a brief

## HISTORY OF OUR PATENT OFFICE.

The first patent law was approved April 10th, 1790. Applications were to be made to the Secretary of State, Secretary of War, and Attorney General. All persons, without reference to nationality, could make the application, the fees being \$3.70 with the addition of ten cents per folio for the specification. On the 21st of February, 1793, this law was repealed, by the passage of another much more full, by which the fee was raised to \$30, and the benefit of it was confined exclusively to citizens of the United States. The application was to be to the Secretary of State; the patent to be examined or revised by the Attorney General, and bear test by the President. By the act of April 17th, 1800, the privilege was extended to aliens of two years' residence in the United States, and the act of July 13th, 1832, only required the alien to be a resident at the time of his application. On the 4th of July, 1836, an act was passed providing for the appointment of a Commissioner, Chief Clerk, one examining clerk, and three other clerks, one of whom was to be a competent draughtsman, and a messenger. That was the origin of the present Patent Office Bureau. At that time it occupied a portion

of the General Post Office building, and when that was destroyed by fire, December 15th, 1836, all the models, records, etc., of the Patent Office were also consumed. By act of March 3d, 1837, Congress provided for recording anew such of the patents destroyed, and assignments thereof as could be obtained, and the officers were directed to obtain duplicates of the most important models burned, provided the amount thus expended did not exceed \$100,000. Several amendments have been made to the patent laws from time to time since, enlarging the powers of the Commissioner, and increasing the force employed, to meet the wants of the growing business of the office, until now over twenty persons are employed, as examiners alone; in addition to a large number of clerks who are also employed for other purposes, such as copying, recording, taking care of the drawings, models, etc., while a large number of females are also kept busy copying the specifications after the applications have been examined.

The act of 1861, increased the salary of the Commissioner one-half—from \$3,000 to \$4,500, and also added \$500 to the salary of the Chief Clerk, and \$300 to the Librarian's. By that act, the examiners were made independent judicial officers, instead of being, as previously, mere assistants to the Commissioner. They now make their decisions upon their own responsibility; and such decisions cannot be controlled by the Commissioner, until they come before him by the regular process of appeal, provided by law.

The act of 1861, also created an Appeal Board, composed of three members, at a salary of \$3,000 per annum each, with a clerk at a salary of \$1,000. All appeals from the decision of the Examiners must be to this board, who have the power of affirming or reversing the decision.

It is a question as yet whether the creation of such a Board is any benefit to the office or the public. One feature of it certainly seems wrong, for while the Board adds nothing to the income of the office, it takes \$10,000 per annum therefrom; and as the patent office, alone, of all the government bureaus is required to be self-sustaining, it is clearly wrong to burden it with this extra expense, while the income of the office is so small that many of the examiners cannot get the pay which the law gives them for the duties performed, and which pay, at most, is far less than that of this Board, while their duties are equally as important, and much more onerous.

**COLD IN RUSSIA.**—The cold, during the past winter in Moscow, Russia, has been such as has not been experienced there for many years, the thermometer descending even as low as 51½° below zero, Fah. This extraordinary cold froze petroleum, and put out the public lights of that description, but it had no such effect upon the gas light, which continued burning without intermission, although reports were circulated to the contrary.

**TO PREVENT A BLACK EYE.**—Immediately, on the eye, or any other part of the face or body being struck with force enough to make it turn black, apply a cloth wet with water just as hot as you can bear it, and continue the application for fifteen or twenty minutes. By this means the blood, which has a tendency to coagulate and turn black, will be kept thin and pass off through its natural channels, and leave the eye, or other part swollen, perhaps, but free from blackness.

**THE EARLIEST UNIVERSAL EXPOSITION** of which we have any record, was held at Rome, in the days of Nero. The philosopher and moralist, Seneca, gives the following account of it: "I was present, the other day, at a solemn exhibition of the wealth of Rome; there I saw statues which were marvels, perfect masterpieces; exquisite stuffs and draperies, and costumes brought from countries even beyond the Roman frontiers," etc.

**WORKMEN ON THE CENTRAL PACIFIC RAILROAD.**—The foremen on the Pacific Railroad are now instructed by the contractors to employ all the white men that offer, not only as mechanics, but for grading and other common labor. They will not be worked with Chinamen. The gangs are gradually working their way back toward the summit as the snow disappears.



## Mechanical.

## The Manufacture of Sewing Machines.

Very few people have any adequate idea of the immense number of sewing machines which are daily turned out in this country. Gentlemen best acquainted with the business, estimate that the entire number of these useful machines made in the United States to the close of 1866, was about seven hundred and fifty thousand. The demand for them is constantly increasing. Every machine, if legitimately made, is reported to Elias Howe, the original inventor, who is entitled to a small royalty on each one, as no machine can be made without the use of a portion of his patent. By the reports made to him there were about 200,000 made during the year 1866; and he is of the opinion that at least half as many more are made by unlicensed makers—mostly in Canada—so that during last year there were probably at least one thousand sewing machines made for each working day in the year! This, however, need not be so very extraordinary when it is considered that their use has now become universal, being employed in every civilized country on the globe, and doing the work, daily, of millions of hands. Almost one-fifth of the machines made in the United States are exported to foreign countries, and nearly all those made by unlicensed parties are sold abroad.

## THEIR UNIVERSAL APPLICATION.

By means of the various improvements and attachments, which have from time to time been added to the original machine, it is now made to perform nearly all that the needle ever did or can do. It seams, hems, tucks, binds, stitches, quilts, gathers, fells, braids, embroiders, and makes button-holes. It is used in the manufacture of every garment worn by man, woman or child. It is employed in the manufacture of hose for the miner and for the firemen, in sewing leather of all kinds for the shoe-maker and the trunk-maker. Mail bags, sails, awnings, valises, and every description of heavy work, where the needle and awl have been the sole implements of manufacture, are now made largely by the sewing machine. As operators have increased in skill and the sewing machine has been improved, the applicability of the instrument has been still more universally reached. Skillful artists have appeared, and a kind of genius has been developed in the use of the sewing machine, by which marvels are executed upon it, as skillful players execute marvels upon the piano-forte.

## ANOTHER PECULIARITY

With regard to this machine, is the fact that the mechanics of no other country have been able to imitate the American machine in its perfection. Foreigners can no more make a Yankee sewing machine than they can make a Hoe's printing press, or a Yankee clock. The effort has been made in all three cases, and signally failed. To start a sewing machine manufacture in Europe, which could compete successfully with the American article, would involve an expenditure of two millions of dollars for machinery, and the importation of a score or two of Yankee foremen and workmen. Even then the risk would be too great for the expenditure involved.

THE DIAMOND DRILL is being successfully and economically used, on a large scale, at the tunnel of Tarase, on the Bourbonnais Railway, in France. It is worked by water power, and  $3\frac{1}{4}$  feet in depth per hour is drilled in very hard rock. The cheap diamonds from Borneo, are used, with very little destructive effect to the drill or gems.

ALLOY FOR HARD TOOLS AND BELLS.—Twenty parts iron turnings or tin waste, eighty steel, four manganese, and four borax. To increase the tenacity, the proportions may be varied and two or three parts wolfram may be added.

HYDRO-PROPULSION.—Our readers will recollect the notice we made, some time since, of an invention in this city to propel a steamer without an engine or wheels. The invention was founded on the principle of "hydro-propulsion," and was claimed as an improvement of the application of that principle in England, as illustrated in the government steamer Water Witch, which was propelled by columns of water raised by an engine, while the invention of Mr. Marquis raised the water without the use of an engine, by applying the steam from the boiler direct to a steam-siphon pump.

There appears of late to be quite a change of tone among English engineers with regard to the possibilities of this form of motor. The experiment, which was at first pronounced by them a total and inevitable failure, is now considered quite within the range of possibility. The official reports of recent trials, even with a very crude and wasteful arrangement of the jets, show that the Water Witch does quite as well as the propeller. The London Engineer—the best authority—says that the results, bad as they are, have led to sanguine predictions as to the final success of the jet system or hydro-propulsion.

It may be interesting, in this connection, to state that hydro-propulsion is no new thing; a patent for propelling vessels by jets of water having been taken out in England as long ago as 1839, by Ruthven. Probably the first instance of its use was that recorded of Dr. Franklin, who, when a boy, "pumped" himself across a pond of water astride of an old wooden pump, working the handle as his propeller.

STILL ANOTHER NEW WHITEWASH.—Dr. Jacobsen, of Hamburg, has invented a new whitewash as durable as paint, and very beautiful. He dissolves 50 parts of glue in 150 parts of water. He then adds two parts of a solution of caustic soda, specific gravity 1.34, and boils. A flocculent precipitate separates, which may, however, be disregarded. When the above mixture has cooled, he adds fifty parts of commercial water-glass solution, and then stirs in enough oxide of zinc to give a proper consistency for painting. If necessary, the mixture must be passed through a mill to make it smooth. This composition, it is said, is well suited for either wood, metal or brickwork. Two coats should be laid on, and when they have perfectly dried, a solution containing ten per cent. of chloride of zinc should be applied. This will give a beautiful gloss, and great durability to the composition.

SHRINKAGE OF CASTINGS.—The shrinkage of the various kinds of metallic castings may be taken as, at least, a very close approximation as follows: Locomotive cylinders, 1-16 in. in a foot; in pipes,  $\frac{1}{8}$  in. in a foot; girders, beams, etc.,  $\frac{1}{8}$  in. in 15 inches; engine beams and connecting-rods,  $\frac{1}{8}$  in. in 16 inches; large cylinders, say 70 in. diameter, 10 ft. stroke, the contraction of diameter  $\frac{1}{8}$  in. at top and  $\frac{1}{8}$  in. at bottom; contraction of same in length,  $\frac{1}{8}$  in. in 16 inches. Shrinkage in thin brass,  $\frac{1}{8}$  in. in 9 inches; thick brass,  $\frac{1}{8}$  in. in 10 inches; zinc, 5-16 in. in a foot; lead, 5-16 in. in a foot; copper, 3-16 in. in a foot; bismuth, 5-32 in. in a foot; tin,  $\frac{1}{8}$  in. in a foot.

MALLEABLE IRON ORE (?)—It is stated in an Eastern exchange, that a Missouri blacksmith has prepared a horseshoe for the Paris Exposition made of raw ore from the Iron Mountain. Half the shoe is finished, and the other half shows the ore as it is dug from the mine.

THE INVENTORS of popular toys get quick returns. The inventor of the common street toy known as the "returning ball," is said to have realized \$100,000; the "always wound up top" realized \$40,000. The inventor of the "walking doll," which was so fashionable a few years ago, made \$75,000 by patent. The dancing "Jim Crow" toy, introduced a few years ago, was invented by an invalid boy, and won a fortune.

FOR THE KEARSARGE COUNTRY.—A party of about twenty or thirty Mexican miners are about to leave Virginia City for the new mines of Cerro Gordo, west of Camp Independence, in the Kearsarge country. They expect to put up furnaces to extract the silver from the ore. The ore found there is said to be very easily extracted.

## Scientific Miscellany.

SINGULAR ELECTRIC PHENOMENON.—Mr. Wm. F. Given, U. S. Vice Consul at Martinique, communicated the following very singular electrical phenomenon to the Smithsonian Institute, as having occurred at that place a short time previous. Just as a heavy thunder shower was about ceasing, a terrific report was heard, accompanied with a vivid flash, when it was found that the electric fluid had struck a house on one of the principal streets, throwing out a large portion of one of its walls into the street. The fluid then passed along several houses, and finally took a downward course to a point about three feet below the pavement, at which it turned, passed under the pavement without disturbing it, and came out through the gutter. At the point of exit, a large flat stone about a foot and a half long by ten inches wide and eight thick, was forced from its setting in mortar, and hurled upward, obliquely across the street, passing through a Venetian window blind and into the house, and fell upon a marble top table, which it shattered in pieces!

ACETYLENE—CURIOUS EXPERIMENTS.—A colorless gas, consisting of two equivalents each of carbon and hydrogen, is contained in small quantities in coal gas, and is supposed to have been the cause of certain mysterious and hitherto unaccountable gas explosions. It may be separated from the coal gas by passing the latter through a solution of ammonia-sulphate of copper, precipitating a reddish brown deposit of acetylide of copper. This being very explosive, igniting with slight friction, is supposed to have been the cause of several explosions which have occurred in moving copper gas pipes and in altering meters where the brass work had been much in contact with the gas, and a deposit of acetylide of copper might naturally have been formed. It is a curious fact that if chlorine gas is turned into a jar of acetylene gas even in darkness, an explosion will ensue; but not so if the acetylene be turned into the chlorine, unless a moderate degree of light be present. In the latter case, the chlorine unites with the hydrogen, setting the carbon free, so that the vessel, which previously held a mixture of colorless gases, is instantly filled with a mass of inky black smoke, giving the jar the appearance of patent leather. These observations are derived from a late lecture by Prof. Frankland.

VESSELS FOR HOLDING HYDROFLUORIC ACID.—The engraver on glass is often at a loss for utensils to hold his acid, but Stolba mentions that glass and porcelain vessels are protected from the action of hydrofluoric acid by a thin coating of paraffin, which is put on by carefully cleaning and heating the vessel and melting some paraffin in it, and moving it until the whole surface is covered, when the excess of paraffin is poured off. By this plan both lead and gutta serena vessels may be dispensed with.

A NEW OLEAGENOUS PRODUCT.—An Australian paper announces the recent discovery in that country of a new species of liquid gum or oil. It says: "A tract of land not less than ten miles square, has been discovered, which everywhere abounds with bubbling springs of gum or oil, while all around are vast quantities of the gum solidified into the consistency of india rubber." When exposed to a fire this substance, which is light, and floats in water, is said to burn with a bright flame, to be accompanied by a thick smoke, and a smell similar to old grease.

TEST FOR STARCH OR GRAPE SUGARS.—Picric acid, one of the derivatives of phenol, formed by the action of nitric acid on phenic acid, is of a yellow color. A few drops of a solution of picric acid in 250 parts of water is added to a solution of this kind of sugar (glucose) containing a little caustic soda, and heated to 90°. The mixture when boiled assumes a blood-red color, a result from the formation of picramic acid. A solution of cane sugar (sucrose), added to a solution of picric acid, does not produce this change of color.

THE musty smell which grain harvested in hot weather acquires, has been removed by Chalmel, by exposing it in the granaries to the influence of quicklime, (which however should not be allowed to come in contact with it), in the proportion of one part of lime to fifty of grain.

HYDROCARBONS FROM FISH.—The distinguished American chemists, Messrs. Warren & Storer, have obtained from menhaden oil, an animal fat contained in the species of herring, known as *Alosa Menhaden*, crude hydrocarbons, which on being rectified gave a product very closely resembling refined coal oil and petroleum in color, odor, and illuminating properties. The naphtha obtained from the crude product by Warren's process of fractional condensation has been subjected to repeated distillations. After nearly a year spent in experiments, they have separated sixteen bodies of constant boiling point, which were found to be hydrides of the higher alcohol radicals; and the more dense homologues of amylene and benzole. These investigations have an important bearing on the question of the origin of petroleum.

Menhaden oil is manufactured largely on Long Island. The fish from which it is made are taken in great abundance all along the sea coast of New England, from whence they have in years past been extensively shipped to the South for food for the negroes. They are also used in large quantities for manure. If we are not mistaken, the oil is considered valuable as a lubricator.

DETECTION OF MINUTE QUANTITIES OF MERCURY.—F. C. Schneider, in an essay "on the chemical and electrolytic behavior of mercury," states, that the slightest traces of this metal in solution, may be recognized by immersing in the liquid to be examined, the poles of a galvanic battery, both of which should be of gold. Upon the surface of the negative pole, a coating of gold amalgam is thus deposited, which is then to be removed to a test tube. This tube, after being hermetically sealed, is strongly heated, whereupon the mercury is sublimed, and collects in the further end of the tube. The addition of a crumb of iodine and gentle heat, is sufficient to produce the easily recognized red iodide of mercury.

THE SPIROMETER is the name of a newly invented instrument designed for measuring the volume of the breath—thereby being also an index of health and vigor. The practical application of this instrument, has shown a marked difference between persons in the habitual use of ardent spirits, and those who abstain therefrom, in their power of respiration. The instrument is now employed by life insurance companies in their examinations of applicants for policies.

A NEW GLAZE.—Common earthenware is glazed with a composition containing lead, on which account it is unfit for many pharmaceutical purposes. The following glaze has been proposed, among others, as a substitute: 100 parts of washed sand, 80 of purified potash, 10 of niter, and 20 of slacked lime; all well mixed, and heated in a black lead crucible, in a reverberatory furnace, till the mass flows into a clear glass. It is then reduced to powder. The goods to be slightly burnt, placed under water, and sprinkled with the glaze.

THE HARDNESS OF SILVER.—M. Mather, an assayer, has shown that the hardness of which carvers in silver sometimes complain, is not owing to the presence of tin, lead, or any other metal, but is solely due to the high temperature at which the silver is cast. By letting the crucible cool until a slight solid crust is formed on the surface of the fused metal, and casting at that moment, a soft silver with brilliant cut is obtained.

GLYCERINE is found to be an excellent material for smearing plaster of paris molds before taking a cast. It is easily applied with a brush, and after the cast has set, it readily separates without the least danger of splintering or cracking. It is said to possess many recommendations over the soap and water usually employed for the same purpose.

GRAPHITOIDAL BORON.—Wöhler has ascertained that this body, originally described by him as puro boron, is a definite compound, consisting of two equivalents of boron and one equivalent of the metal aluminum.

PRODUCTION OF ANILINE.—By adding to nitro-benzole an acid solution of chloride of tin, a strong reaction is obtained in a few moments, great heat is evolved and aniline is produced.

TOCCOLINA.—A bituminous substance, which is called toccolina, has been discovered in Italy. It is similar to our petroleum, and when refined, yields a burning fluid of excellent quality.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**PAINE & STEVENS' CONCENTRATOR.**—Messrs. Paine & Stevens, of Grass Valley, Nevada county, Cal., have made applications, through the agency of this office, for a patent for a concentrator and separator, which is quite novel in its construction and operation. Its chief characteristics, according to the representations which have been made to us, are, the amount of work it will do, and the trifling amount of power required to operate it. A machine capable of putting through from forty to fifty tons of pulp in twelve hours can be run, at its full speed, by the power of one man applied to a crank. Such a machine has been in actual work for several weeks upon the reservoir of tailings connected with the Star Spangled Banner mine and mill, near Nevada City. The amount of sulphurets saved per day, as per present working, is about one and a quarter tons, which assay \$150 per ton, to say nothing of a large amount of quicksilver and some free gold, which is also recovered—pretty good work for a single machine, which, when connected directly with a battery, would not require two hours' attention in twelve, and that merely to clean it up. The machine, as now constructed, is cleaned up by hand; but is capable of accommodating a ton or a ton and a half of sulphurets before cleaning up; and we can see no reason, from an examination of the model, why it might not be made self-discharging. The only one hitherto constructed is the one at work as above on a contract to concentrate the sulphurets from a reservoir containing about 1,500 tons of tailings, to which the mill is daily adding about 25 tons. The machinery is entirely different from anything of the kind with which we have heretofore met. It constitutes the principle of the "buddle" actuated by machinery. The receptacle which receives the sands and retains the sulphurets is stationary, and consists of a pan-like depression, sunk below the floor, from 17 to 24 feet in diameter, and about fourteen inches deep. The bottom is slightly inclined from the circumference to the center or discharge orifice. Through this orifice an upright revolving shaft is placed, and to which are affixed six distributing troughs, at equal intervals, reaching to the inner surface of the pan-like depression in the floor. The pulp is conveyed by a suitable stationary sluice from the battery or any other desired source of supply to a kind of hopper attached to the upright shaft, and from which it is fed into the six troughs aforesaid, which revolve with the shaft and discharge the pulp against the inner periphery of the pan. The bottom of the pan being inclined toward the center, the heavy particles have a tendency to remain where they fall, while the lighter portions move gradually toward the discharge orifice. This action of separation is facilitated by a large number of light drags, made of shortstrips of common canvas, attached to a set of revolving arms working upon the central shaft, in the same manner as the troughs already described. All the power required is to move this central shaft around slowly in its step. We are assured that the separation thus effected is very complete—a ring of a very few inches only of the mass which remains in the pan being mixed. This, on cleaning up, is shoveled out upon the platform and put through a second time. That portion which remains near the circumference being 95 per cent. sulphurets or more, while but a small fraction of one per cent. of sulphurets can be found in the sands, which go to waste. As the mass of sand and sulphurets accumulate in the pan, the circular wall of the outlet is made to rise automatically, more or less rapidly, according to the proportion of sulphurets to the mass of sand being put through the machine. The machine is exceedingly simple, is constructed of wood, with the exception of a few feet of gas-pipe and seven or eight hundred pounds of castings. It can be built by any carpenter. One machine, costing about \$1,400, is sufficient to concentrate the sand from 25 to 30 stamps. The above facts are, of course, *ex parte* evidence, as we have never seen the machine at work. The principle, however, as shown in the model, looks feasible. Large numbers of millmen from

Nevada and Grass Valley and vicinity have visited Nevada City to see it work. We hope soon to give an illustration of it, and facts with regard to its efficiency derived from disinterested parties.

**A NEW DITCHING MACHINE.**—The Santa Clara *Argus* has seen a ditching machine, the invention of Mr. J. P. Henning of that county, which it is thought will prove of great value to the farming interest, in the saving which it will make in the cost of fencing. The editor of the *Argus* has witnessed a trial of the machine, of which he speaks as follows: "Although a four horse machine, only two were hitched to it, and apparently with as much ease as they would draw an ordinary plow, at each trip over the ground, they cut a ditch twenty inches in width and two in depth, depositing the excavated earth at a distance of six feet to one side. Mr. Henning claims that four horses can draw this machine twelve miles in ten hours, cutting a ditch two feet wide and three inches deep, equal to one mile of ditch three feet deep, with an embankment of loose dirt two feet high on the top, thus making a five-foot fence around 640 acres in four days."

**A NOVEL MORTISING MACHINE.**—We have witnessed the working of a new and novel mortising machine, invented by Mr. John Cox, of Lane county, says the *Oregonian*. It would be difficult to describe the machine, though it is simple in construction. The power is applied by an oscillating lever and the mortising chisel works much upon the principle of an augur. It will do the work of about four men, or rather, one man can make a mortise of four inches in depth, perfect in outline and very smooth in surface, in about one-fourth the time required to bore and chisel it out. The probable cost of the machine will be about \$25. The great advantage secured by the machine is that a mortise can be made with it, in an upright post or a beam overhead, with equal facility.

**A NEW HAY PRESS.**—The *Visalia Delta* says that Mr. John McKearn has invented a new hay press, which he calls the "Horizontal Capstan Press." The machine looks substantial and powerful, and it will be thoroughly tested the present season. It has already been subjected to practical operation.

**A STEAM BEDBUG EXTERMINATOR.**—The *San Andreas Register* says that Mr. I. C. Green, of that place, has invented a steam bedbug exterminator, which consists of a sort of double tin coffee-pot shaped can with a furnace in the middle; the water is introduced into the can by a small opening at the top, which is then corked up, and in a few minutes after the fire is started the steam comes whistling from a long tube attached. The whole thing is about the size of a common coffee-pot, which can be taken by the handle and carried from room to room, and by means of the tube the steam can be introduced into every part of the bed and house without moving or disturbing anything in the house.

**A FIRE ESCAPE FOR TRAVELERS.**—In England, a portable fire escape has been introduced for the use of travelers, which is said to be as safe and easy to use as a stairway. Within a thin metallic case, seven and a half inches in diameter, are coiled on a pulley thirty feet of light, strong and flexible steel wire rope, passing out between rollers, which may be adjusted by a hand screw to any desired pressure, and terminating in a hook that can be fastened to a window seat. A chair formed of leather straps is attached to the case, and a person seated in the chair may regulate or arrest at pleasure the speed of his descent by means of the screw. This sort of fire-escape can be carried by any one in a portmanteau.

**AN IMPROVED STOVE.**—An Englishman is said to have invented a stove for burning solid fuel, which so consumes its own smoke and gases that it may be used even without a flue or chimney, as a kerosene stove is used; although, in actual practice, a small vent, consisting of a half-inch pipe, is employed to carry off the small residuums of gas. The effective principle of this stove consists in causing all the gaseous products of combustion to pass into a chamber filled with manufactured peat charcoal, which absorbs the carbonic acid and other gases, and burns with a very small supply of air until nearly or quite all the carbon is consumed. A half-inch pipe is found sufficient to carry off the excess of gas. Such an apparatus might be possible; but how can the imminent danger of explosions from the accumulation and sudden firing of gases be avoided? If the gases could be burned as fast as generated, all would be well; but otherwise, and alas!

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING,  
JUNE 1, 1867.

## CITY STOCKS.

City Stocks continue dull of sale in the open market. We note transactions in National Ins. Co. at \$71 per share, Spring Valley Water Co. at \$67 per share, and California Steam Nav. Co. at 71½@70½ cent.

Considerable sales of Legal Tenders have been made at 73½@73¼c. At the close, 73½c was bid and 74c asked. June 7-30's sold during the week at 80¼c.

The sales of mining stocks, city shares, etc., in the Stock and Exchange Board during the month of May in the past four years, show the following aggregates: May, 1864, \$4,688,285; May, 1865, \$5,665,549; May, 1866, \$3,052,102; May, 1867, \$7,651,855. The transactions in the Board during the month just closed exceed those of any previous month since January, 1864, about \$2,000,000. Frequently during the past month the sales of a single stock amounted to more than \$100,000 in one day.

## MINING SHARE MARKET.

The Mining Stock Market has been exceedingly active, but nearly every share on the list has fluctuated materially, and at the close less firmness prevails than at the beginning of the week. Operations on the Comstock lode are rapidly augmenting, infusing life into companies that have been comparatively idle for a long time past. The aggregate product of the Washoe mines is rapidly increasing, and the yield has at no former period been so large as at present.

**SAVAGE**—sold to a limited extent during the past week, advancing from \$3,850 to \$3,950, seller 3, receding to \$3,850@3,900, and closing yesterday at \$3,875. The ore extracted from this company's mine during the week ending May 25th amounted to 2,136 tons, showing an approximate value of \$97,954, equal to \$45.55 per ton. Of this amount, the "mines" on the seventh level produced nearly all, the north mine yielding the largest amount—926 tons. It is stated that the ore taken from the breasts in the north and middle mine on the seventh level has been unusually good. The seam of ore found above the second station, mentioned in our last issue, still holds out, but is so difficult of access that it produces ore slowly. The general appearance of this mine continues in a very satisfactory condition. Both mills of this company are in excellent condition, and it is said reduced some 2,500 tons of ore during the month just closed—more than they have ever reduced in any previous like period.

**HALE & NORCROSS**—remains out of the market. We quote it nominally at \$3,500. Advice to the 27th of May state that they were opening both north and south of the "south raise" on the 700-foot level, and that these developments show a marked improvement in the quantity and quality of the ore. South of the raise they have cut east about ten feet, finding ore clear across to the east wall; north of the raise they went seven feet east, but had not yet reached the east wall. The ore delivered to the custom mills from the 1st to the 24th of May amounted to 2,812½ tons, 65 per cent. of which—the amount exacted from the mills—shows an average yield of \$123,133.67. On the 21st of May, the shaft was 371 feet in depth.

**CROWN POINT**—has been in the market to a larger extent than usual, selling, for the most part, within a range of \$1,800@1,750, then at \$1,690, and closing at \$1,595, seller 30. During the week ending May 24th, 549 tons of ore were extracted from the mine. The east vein, on the 500-foot level, is now developed—north and south—about 45 feet, and is said to be looking as well as when first opened. The west drift, same level, is in 147 feet. The shaft toward the 600-foot station is 36 feet in depth. The election of Trustees for the ensuing year takes place on Monday, the 3d inst. From the annual report of the Secretary of this company for the fiscal year ending April 30th, 1867, we make the following extracts:

RECEIPTS.	
Cash on hand May 1, 1866.....	\$ 69,930 81
Bullion.....	1,247,933 47
Other receipts.....	18,412 91
	\$1,336,272 22
DISBURSEMENTS.	
Dividends.....	\$372,000 00
Mining expense.....	260,834 85
Mining expense—company.....	1,434 37
Mining expense—outside mills.....	339,459 96
Legal expense.....	91,762 48
Mill improvement.....	85,378 38
Mine improvement.....	8,768 54
Salaries, office rents, etc.....	25,817 07
Taxes, assaying, etc.....	42,541 97
Cash in treasury, May 1, 1867.....	\$7,061 30
	\$1,336,312 22

There were 34,750 tons of ore reduced, making the average yield per ton for the en-

tire year \$35.91. The average cost of reduction has been as follows: 11,631 tons at Rhode Island mill, \$10 per ton; 1,460 tons at Crown Point mill, \$12.39; 21,513 tons at outside mills, \$14.97, and 146 tons of first-class ore, \$50 per ton. Total cost of mining 34,750 tons of ore, \$7.50 per ton. The Superintendent, in the course of his report, states that "the entire number of feet of drifts and cross-cuts run during the year aggregate 3,010 lineal feet, only 110 feet of which have been in ore."

**YELLOW JACKET**—advanced from \$1,775 to \$1,790, receded to \$1,700, seller 3, and closed yesterday at \$1,725. During the week ending May 20th, 1,671½ tons of second class ore were extracted from the mine. The hullion yield during the same period is stated at \$97,361.10, and added to the amount reported in our last issue, shows a product of \$163,672.46 from the 1st to the 20th of May.

**CHOLLAR POTOSI**—continues to be one of the most active stocks on the list, selling at \$607.50@615, declining to \$560, under large sales, then obtaining \$579@590, and closing at \$572.50. The yield of ore continues large, amounting to 3,609½ tons during the week ending May 25th, of which amount the Potosi mine produced 3,438 tons, and the new shaft 171½ tons. We have no material change to note in this mine since our last reference.

**GOULD & CURRY**—rose from \$565 to \$595, receded to \$570@560, and at the close sold at \$562.50. No estimate can be formed of the amount of ore in the upper chambers of this mine, but it is believed that about 50 tons per day can be extracted for the present. The hullion received at the office in this city during the month of May, aggregated \$74,862.68, a portion of which is the product of April. The mill has been running about twenty days in the month of May.

**KENTUCK**—has been quite active, opening at \$385, improving to \$409, dropping to \$370, rising to \$425, and closing at \$411. This company had a cash balance of \$99,917.07 in bank on the 24th of May. We learn that they extract at present about 70 tons of ore per day, showing an average assay value of \$55 per ton. They reduced about 2,000 tons of ore during the past month....ALPHA sold at \$450@411 per foot.

**OPHIR**—has been largely dealt in within a range of \$405@340, closing yesterday at \$320....BELCHER fell from \$415 to \$385, and closed at \$390....IMPERIAL opened at \$195@205, receded to \$190, advanced to \$195, and closed at \$199 bid. The third shipment of hullion of this company to the San Francisco office in the month of May, amounted to \$15,233....EMPIRE sold within a range of \$170@165....A few shares of GOLD HILL Q. M. & M. Co. sold at \$165.

**OVERMAN**—has been exceedingly active, about 1,000 feet changing hands within the past week, opening at \$65@70, receding to \$58, and closing at \$61. It is reported that a change in the management of this mine is the cause of the recent large sales under a very marked advance....CONFIDENCE declined from \$80 to \$65, and closed at \$68 bid....BULLION receded from \$35 to \$26.

**DANBY**—receded from \$27 to \$15, and closed yesterday at \$20. We are informed that this company is now taking out from 15 to 20 tons of ore per day, of an average value of about \$20 per ton. During the past week, \$4,126.49 in hullion have been received, and in February and April of the present year, \$4,244.90. From the past history of this company, we glean the following: From February, 1862 to March, 1865, this mine produced \$272,749.98 in hullion. There have been nineteen assessments levied since the organization of the company, amounting to \$224,000, and \$56,000 disbursed in the shape of dividends to its stockholders. The mill cost \$85,000, and lately an additional sum of \$8,000 has been expended upon it. The hoisting works and pump involved the expenditure of \$36,000.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,604,932.

**NEW INCORPORATIONS.**—Articles of Incorporation have recently been filed in the County Clerk's office in this city as follows:

Iowa Gold Mining Co., Amador county Cal. Capital stock, \$10,000; 100 shares. Trustees: Jno. F. McCauley, Wm. L. Higgins, Johnson Price, John R. Wilde and W. C. Parker. May 28th.

Winchester Gravel M. Co., Placer county. Capital stock, \$100,000; 100 shares. Trustees: Irwin McDowell, B. M. Hartshorne and W. H. Sears. May 21st.

REGISTER YOUR LETTERS containing money addressed to us, or we will not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

SOME of our exchanges are very irregular in their appearance upon our table, and those that are regular, seem to be more interested in politics and politicians than in recording the progress of our miners and others engaged in developing the vast resources of our State. Come, gentlemen, a little less politics, and a little more "local intelligence."

## CALIFORNIA.

## Alpine County.

From the *Miner*, May 25th: Several tests of rock found on the Tarshish croppings, have been made, yielding from \$7 to \$60 per ton. A new vein of rich ore has been struck. The frame of the new ore house is nearly completed.

## Amador County.

From the *Ledger*, May 25th: The Union mine is turning out better than it has for years; the ore is quite full of free gold.

The Grass Valley mine is being opened by tunnel from Grass Valley Creek. This company's Italian mine still continues to yield as regularly as clock work.

The Anaconda mine has been freed from water, and the main shaft has taken a rapid downward tendency.

The Golden Eagle, Fogus, & Co., still continues to yield excellent ore with unusually fine prospects ahead.

## Calaveras County.

From the *Chronicle*, May 25th: A New York company propose to sink a shaft on the Marlette claim near Middle Bar. The John P. Shear lead will be prospected this summer; ore from it has already yielded from \$8 to \$10 per ton. Several mills are at work at Angels crushing quartz. At Alta-ville W. H. Bovee with 15 arrastras, and 10 stamp batteries, is handling about 15 tons per day, and is yielding him, on an average, \$30 per ton.

The Mokelumne and Campo Seco Canal and Mining Co., have nearly finished the rebuilding of their works, and are making a survey for an extension to the newly discovered diggings at Cat Camp.

## Contra Costa County.

From the *Gazette*, May 25th: The mines now working and shipping coal are the Black Diamond, Union, Pittsburg, Independent and Eureka. The Mount Hope Co. have opened a mine in the vicinity of the Black Diamond.

## Fresno County.

From the *Mariposa Mail*, May 25th: R. H. Rogers, of San Francisco, is moving a 5-stamp mill from Clear Creek to the St. Patrick mine, Texas Flat. It is his intention to add five more stamps.

## Humboldt County.

From the *Yreka Union*, May 18th: At Mugginsville, Hollenback & Co's claim is paying well—about \$60 per day. Eastlick & Co. are cutting a new ditch to convey the water from Howard's mill to the diggings below Mugginsville. Shelly & Co. have good prospects.

At Deadwood, Knief & Co., Haley & Co., and Jasper & Co., are taking out more money than at any previous period during the last five years. Squire Steele has commenced work on the Steamboat claims. J. K. Luttrell, O. P. Goodale, L. Williams, J. W. Tuttle and others are preparing to prospect Patterson Creek. Goodale & Co. are working the surface diggings in the vicinity of Patterson Creek and are getting good pay.

## Mariposa County.

From the *Gazette*, May 25th: The owners of the Potts vein in Hunter's Valley have a new mill nearly completed and ready for the machinery, which will be put up in a few days. The mine still continues to yield excellent rock.

The Buena Vista Petroleum Co. have concluded to suspend operations until more satisfactory results can be obtained. The amount expended for machinery, etc. during the last year has been about \$5,000, outstanding indebtedness, \$1,400.

## Nevada County.

From the *Transcript* of May 23d: The Cunningham mine is looking first rate. A contract is to be let for running two drifts into the ledge, in order that rock may be more easily taken out.

The Eastern Co., at Hunt's Hill, at a distance of 500 ft. from the mouth of their tunnel, have a fine bed of blue cement. The clean-up each week amounts to from \$1,200 to \$1,500.

Same of 25th: Binsley & Co., at Kentucky Flat, took out two lumps of gold, one weighing \$53, the other \$45. Both

were as pure as though refined by fire. Specimens ranging from \$10 to \$30 are frequently taken from these claims.

Same of 26th: On the Homestead ledge, Myers' Ravine, the owners got in with the tunnel, striking the ledge 60 ft. below the surface. The lead is 3 ft. wide, and the rock is filled with rich sulphurets, in which the free gold can be seen. The opinion is that it will pay more than \$50 per ton. One hundred ft. in this claim was sold a day or two ago for \$500.

Considerable prospecting for quartz has been made in the vicinity of the Anthony House, Pleasant Valley, recently. Thompson & Co. have a promising lead several feet in thickness, upon which they have sunk a shaft 45 ft.

Same of 29th: The Eagle Co., at Relief Hill, have completed a head-rock tunnel 800 ft. in diameter and 115 ft. below the surface. This work cost \$14,000.

From the Grass Valley Union of May 21st: Rock from the Grass Valley Consolidated mine, on Union Hill, has thus far yielded from \$27 to \$31 per ton. The machinery for a 10-stamp mill, etc., has been purchased in San Francisco.

A. H. Houston sold, on Tuesday last, a 1/2 interest in the Houston Hill mine, and a 1-16 interest in the Orleans quartz mill, to J. A. Pierce, of Santa Clara, for \$22,000.

EXCELSIOR.—From the *Gazette* of May 23d: Work is now being done on four different parts of the Mohawk and Montreal mine. The tunnel on the third level is in a distance of 80 ft., from the end of which they intend to drift square for the ledge. It will tap the ledge upwards of 300 ft. from the surface. The rock in the shaft is looking better than ever.

From the *Transcript* of May 28th: The California Co. have sunk 100 ft. on their ledge, and run a drift some 30 ft. The ledge is 7 ft. wide, and presents an excellent appearance.

From the Meadow Lake Sun of May 25th: A new discovery has been made a short distance below the Excelsior, and located under the name of Green Emigrant. Its specimens, if anything, are richer than anything heretofore found in the district.

A fine prospect of free gold has been extracted from the Golden Eagle Co's claims. The rock from which it was taken is estimated to yield \$250 per ton.

## Placer County.

From the Nevada Gazette of May 29th: The new cement mill of King Bros., near Dutch Flat, is under way with its eight stamps, making each a drop a second.

From the Anburn Stars and Stripes of May 22: The Green Emigrant is constantly improving. The company have been much interrupted for want of water. They have not yet made a clean-up.

Mr. Linn has commenced operations on the Westchester mill. Claims on Bushy Cañon are looking up in the market.

Mr. Francis Clark, Supt. of a Washoe and San Francisco Co., has been prospecting between Michigan Bluff and the Middle Fork, near American Bar. Several ledges have been opened and satisfactorily tested. He will erect a 10-stamp mill.

VanArnsdale & Ray, at Deadman's Cañon, work 700 lbs. of rock per day with an arrastra, which yields \$18 per ton.

From the Dutch Flat Enquirer of May 29th: J. & A. Reistone & Co. have erected a mill on the Redstone lode, near Lost Camp.

M. J. Hydell, after expending \$25,000 and running a tunnel 1,000 ft., has at last struck a very rich streak of cement, from 7 to 10 ft. wide, reaching several feet up from the bedrock.

## Plumas County.

From the *National*, May 18th: Laufman & Co. have discovered a quartz ledge one-half mile west of the Mountain View, in Indian Valley, about three feet wide.

The New York Co. have made arrangements with Judkins & Co., of Round Valley, for water from their reservoir. They intend erecting a mill upon the ledge, and expect to have it running by the 1st of August.

At Mill Creek lately, Mr. C. Galkin picked up a \$40 slug. Mr. J. Ellis also picked up a slug of the value of \$53.

## Tulare County.

From the *Delta*, May 22d: The Long Tom Co. will soon suspend operations for some weeks for the purpose of putting in new machinery, etc. McFarlane, Tucker & Bro., Pile & Collins, and others, have lodes of undoubted richness. The mine of the McFarlanes at Howland Gulch, eight miles this side of Posey Flat, has been developed to some extent, by Andy McFarlane, and presents indication of immense richness.

## Yuba County.

From the *North Californian*, May 22d: The Babb claim at Timbuctoo, has turned out some cement which is literally spangled

with gold. At Bangor, a steam cement mill is in operation. H. G. Kendall has disposed of his mining interests to a San Francisco company, who will put up a cement mill as soon as the machinery can be manufactured. There are six or seven other claims being vigorously prosecuted.

## BRITISH COLUMBIA.

From the *Cariboo Sentinel* of May 6th: At Williams' creek, the Bradley-Nicholson Co. are making preparations to ground sluice their front ground as soon as they can get water. The Chinese Co. have been making from \$10 to two ozs. a day to the hand through the winter. The Taylor Co. are doing well. The Deadwood Co. are running a drain to tap the hill channel from the upper shaft of the Wide West Co.

The following companies have been at work all winter, with good success: Caledonia, Last Chance, Cameron, Prince of Wales, Rankin, Wide West, Henrietta and Forward.

The following companies, which have been at work all winter, have suspended, on account of water: Well Mary Ann, Brouse, Dutch Bill, Bailey, Steadman and Six-Toed Pete.

Started lately, and now at work: Burns Tunnel Co., Chippis, El Dorado, Diller, Bald Head, Bed Rock Drain, Welsh, Australian, Cariboo, Never Sweat, Nevada, Prairie Flower, Dead Broke and Casket. The Bed Rock Flume, Hit or Miss, Borealis and Jenny Lind Cos. expect to start soon.

The Forest Rose Co. worked the greater part of the winter with a rocker, and declared a dividend of \$140 to the share after paying the wages of 11 men.

At Stout's Gulch, the Floyd, Alturas and Jenkins Co's are at work.

At Lightning creek, the Blyth, Eastern, Welsh, Eureka and Ross are at work.

The Smith Co., at Antler creek, have been engaged running a tunnel all winter. They have got in 250 ft. The air in the tunnel is so bad that they are obliged to sink a shaft for ventilation.

The Anglo-American is the only company at work on Kitchley's creek.

Two companies are at work on Last Chance creek. The same number at Davis creek.

At Grouse creek, the Tiger, Heron, Blackhawk and Discovery Cos. are at work. The Heron Co. has declared dividends since they began work to the amount of \$17,000 per share. The Discovery Co. has declared a dividend of \$250 per share for last week's work.

At Conklin's Gulch, the Ericson, United, Home-Stake, and Hood Cos. are at work. The United Co., with a small head of water, last week washed up 472 ozs.

A discovery has been made in the Vigna and Cloggan, at North Wales. Three-quarters of a ton of ore yielded 62 ozs.

The Cariboo Co. washed up yesterday, as the result of 2 1/2 days' work, 92 1/2 ozs. They found a nugget, containing a little quartz, weighing 9 1/2 ozs. The Bald Head Co. also washed up yesterday 55 ozs.

## COLORADO.

From the *Deuver News* of May 8th: The Sukey Co. are driving a tunnel into Glacier mountain. It is in 160 ft. During the past month a shaft has been sunk 35 ft., developing a crevice 2 1/2 ft. wide of solid silver ore. The ore is so easily obtained that three men can take out enough to supply large works with all they can run.

The Bullion Co. are tunneling at the head of Clinton Gulch. Their shaft is 124 ft. deep. Clark & Chantler have their shaft 80 ft. deep. Christian & Hooper have their shaft 50 ft. deep. They have a well-defined crevice of 4 1/2 ft. in width. Mumford, Lawson & Co., after running a tunnel 47 ft., struck a well-defined crevice.

Reynolds & Co. sunk a shaft 30 ft. deep on the Colossus lode, in Galeana Gulch. Bunches of galena were taken out from the surface down.

Mr. John Collom intends to erect large smelting works at Montezuma the coming summer, to run on custom work.

Five mills are running in Gilpin county. The report of gold shipments show from \$20,000 to \$30,000 per week.

From 4,200 lbs. of Baker ore, treated at Krauss, Reese & Bruckner's Works, a silver brick was taken, valued at \$85.30; 2,000 lbs. of Crawford ore yielded \$65.40; 15,000 lbs. of Pewabic ore gave \$38.39; 600 lbs. of ore from the Square and Compass lode, Georgetown, weighs 207.62 ounces—value, \$218.50.

Charles P. Slade has purchased of W. H. Jones Nos. 5 and 6 west, on the American Flag lode, Nevada Dist., Gilpin county; consideration, \$5,000.

From the *Denver Register* of May 18th: This week the Gunnell Co. took out 105 ozs.; the Black Hawk, 195; the Smith & Parmelee, 95. The banks shipped as follows: Geo. T. Clark & Co., 319 ozs.; Rocky

Mountain National Bank, 200 ozs.; Warren Hussey & Co., 105 ozs. Total, 714 ozs., valued at \$15,000.

## IDAHO.

From the *Owyhee Avalanche* of May 11th: Mining has commenced in several places between Silver and Ruby creeks. It is probable that \$100,000 will be taken out in Owyhee this spring and summer. The mill, mine and property of the Ainsworth Co. is under the management of W. B. Crane. It is believed that the Surplus Oro Fino mine, with careful mining and assortment, will pay good dividends. It is in every respect identical in size and quality with the Oro Fino.

The Webfoot mill is now ready to crush ore, and is expected to commence in the early part of the week, on rock from the New York ledge.

The Oro Fino road will be ready for quartz teaming in a few days. After two weeks run, of a 5-stamp mill, on ore from the Elk-horn ledge, a clean-up was made, assayed value of which was \$8,300; amount of ore, 100 tons. This vein is from two to three feet wide.

Same of 18th: The mill of the New York and Owyhee Co. is undergoing repairs; it is expected to be in running order early in June.

The Flint Dist. is admitted to abound in quartz, rich in gold and silver. Rising Star ore has yielded from \$35 to \$171 per ton. Its ores will be practically tried by the common stamp and pan process, and by this including roasting after crushing and before amalgamating; by the Freiberg barrel process and the one of smelting and shipping in a concentrated mass—making four separate processes to be applied in the next few months.

The Iowa Co. has decided upon the Freiberg process as the one best adapted to work the ore. The Morning Star mill is ready for work. Labor has been commenced on the north extension of the Poorman. Placer mining is thoroughly inaugurated in Boise Basin. J. A. Pinney's claim, on Tuttle's Gulch, cleaned up \$1,500 for seven days' run, and Fox & Co., on Buena Vista Bar, \$3,000 for same time.

From the *Idaho World*, May 15th: The snow in Lemhi is too deep for general mining; a few rich spots have been found about Leesburg. Mr. David Elder, a pioneer miner, has just arrived from Lemhi; he thinks some \$4 a day diggings may be found, and perhaps a few rich pockets, but he has very little faith in that region.

Underwood & Whiting made a clean up Monday, after five days' run of their claim on Bonum Hill, and took out \$2,500; the claim of Kennelly & Co., gave a total of \$2,400 in the last clean up; Donnelly's claim also gave a rich yield a few days ago. The claims on Moore's Creek are paying well. The claims at Granite Creek are paying very rich, water is plenty, and miners are in high spirits and busily engaged.

## MEXICO.

The correspondent of the *Bulletin* of this city, writing from La Paz, Lower California, May 12th, says: The mines, except those of the Triunfo and Mexican Co., are doing little or nothing. The latter company are annually augmenting their shipments to Freiberg, and so far have been the only really successful company organized in this territory. The Triunfo Co., since the erection of their new mill, have been doing better, shipping about \$20,000 by each steamer. The Freiberg barrel process is still preferred to the California pans in this mill. The company have several mines; the one in which they are principally working, the Mendocena, is down to a depth of nearly 600 ft. The entire shaft is in good pay ore. Very little stoping has been done, and wherever the vein has been pierced by levels, the ore is continuous and abundant.

## MONTANA.

From the *Montana Post* of May 11th: The Boulder Ditch Co. own nearly a mile of the Montana Gulch property and 700 ft. in Gold Hill. They bring their water from Boulder creek. This they do by bringing the ditch to Confederate, 417 ft. above the level of the gulch, laying an immense reservoir down into the gulch and up the opposite hills to a height of 377 ft., and forcing water, by hydraulic pressure, through this into the ditch leading to their ground. For this they have purchased 1,700 ft. of 22-in. iron tubing, made of from No. 7 to 12 boiler iron, capable of conveying 1,100 inches of water under 60 ft. pressure. The tubing cost \$25,000 in St. Louis. It is in 16 ft. joints; a portion of the iron is 1/4-in. thick. It was tested in California under 600 ft. of pressure, and in St. Louis under 700 ft., without injury. Besides this, they have 1,100 ft. of smaller iron pipe for tapping the ditch for the hose and ground sluices. The company intend to put in a bed rock flume



and work out the gulch as they go. The cost of the ditch completed will be \$50,000. By the last of June the company expect to be at work. Their ground is known to be immensely rich.

Mining in Last Chance and Grizzly Gulches has fairly commenced. J. M. Vivion has constructed a flume across Last Chance Gulch 400 ft. in length, for the purpose of supplying water to the bar on the northeast side of the gulch.

Both the Yan Yan and Helena ditches are dry at present.

New York and Caro Gulches are getting quite lively. The claims are paying well.

The Esler Co. sent over 199½ lbs. of silver. The blowers broke down during the cupellation, but Mr. Doidsheemer brought the blacksmith's bellows into play and completed it. A scarcity of coal has impeded operations, but a supply will be on hand in a short time.

A clean-up of 202 ozs. was made at Turnley's mill, on last Friday, from Whitelatch Union ore.

A special dispatch in the Denver News, dated Lafayette, Indiana, April 9th, says: "Dr. Barber's party left for Montana today. Four ladies of the highest social standing accompanied the party, which has invested \$40,000. They have three quartz mills with 40 stamps, and expect to realize a round million this season. Those are the four staple articles needed just now—men, money, mills, and ladies. The first three are absolutely necessary; the latter, mighty convenient."

A correspondent at Salmon river writes: Nothing can be done in the way of mining until the first of June. On Camp creek, but one claim was working, paying 23 cents to the pan.

#### NEVADA.

From the *Enterprise* of May 21st: Mr. H. C. Toombs exhibited yesterday a bar of bullion from the Midas mine which weighed 89 ozs., was .897 fine, and valued at \$1,663.64. It was almost pure gold. The bar was the result of 36 tons of ore worked by an arrastra, and bore the assaying stamp of Ruhling & Co.

In the show-windows of Fred Schoeneman are to be seen some exceedingly rich specimens of gold-bearing quartz from Pine Grove. The samples were sent to this city by Mr. McCann, and are from the Wilson lead, the Midas, the Wheeler, the Hamilton, and the Imperial. All are of the same character, and appearance, and nearly equally rich in free gold, though one or two of the specimens are literally covered with spangles of gold.

#### Reese River.

From the *Reveille* of May 17th: The Keystone mill has been undergoing repairs. It is the intention of the Supt. to add two roasting furnaces and increase the capacity of the amalgamating department, which will give it 20 stamps perfect complement. The general rate for reducing chloride ore in this district is \$25 per ton.

Same of 20th: A statement of the reduction of 2,844 lbs. of ore from the Dosert Queen ledge, Reveille Dist., worked at the Parrott mill at Big Creek, shows, by assay, \$891.11; 80 per cent. deducted for expenses left \$623.50.

The mill of the Twin River Co., at the Murphy mine, has resumed work.

Same of 21st: A delightful cabinet specimen of mineral was obtained, a few days ago, from the Fuller mine, on Lander Hill, which is as beautiful as it is rare. It is a piece of ore about one inch and a half long, one inch and a quarter wide and three-quarters of an inch thick. On the upper face there is a laminar crystal of hromide, circular in form, and a little larger than the diameter of a dime. The crystal has many points, which radiate from a common center. On the two sides are little dots of rich ruby silver, which is regarded as a unique occurrence in mineral of this character.

From the *Silver Bend Reporter* of May 18th: The Orlando ledge, in Argentoreo Dist., is about 28 in. wide, and has its face laid bare for a length of 40 ft. to the depth of 7 ft., which exhibits a beautiful quality of ore. Assays of the ore give \$669 of silver per ton. The Antelope is a parallel vein to the Orlando, and looks finely.

In Empire Dist., Sine & Co. have about 50 tons of ore at the surface that is estimated will work from \$.00 to \$250 per ton. Specimens from the Jerusalem lode assay largely. A depth of 15 ft. has been sunk upon this ledge, and a number of strata of ore exposed. The mineral occurs in limestone similar to the mines of Hot Creek, Reveille and Milk Springs Dists. But few people are at present engaged at Empire.

Several wagon loads of ore have left Reveille Dist. for Austin, where the ore will be reduced. Three tons were from the Fisherman ledge, and was estimated would

yield \$500 per ton. The remainder was from the Indian Queen lode, and a ledge located by Mr. Emersly.

The Fisher vein, at Milk Springs Dist., is 6 ft. wide and of remarkable richness. The Germania has fine walls on either side and a body of good ore 5½ ft. thick. The company has forwarded a lot of ore to Austin for reduction. The result of the working has not yet transpired.

A piece of ore from the Oriental lode, Manhattan Dist., was assayed this week, and yielded at the rate of \$82.13, silver, per ton. The Oriental ledge is one recently located by Messrs. Quimley & Klink, is well defined, with smooth and perfect walls on either side, and of a thickness of 6 ft.

The Combination Co. will commence the work of excavation for the foundation of their 40-stamp mill the coming week. East Belmont is the site selected.

At Silver Peak, the Bradley ledge has a width of 10 ft. to the extreme depth sunk upon it—40 ft.—and the bulk of the ore found is galena, highly argentiferous. The Belmont ledge has been sunk upon to a depth of 70 ft. and of a uniform width of 12 feet. This ore is identical with that of most of the lodes in Palmotto Dist., and a small lot worked in the Rigby mill at San Antonio yielded \$156 to the ton.

Some singular looking ore has been deposited at the office of Bont & Stetefeldt for assay, which resembles rich antimonial silver. It was brought from the Morey Dist., from two ledges named American Eagle and Magnolia. Assays from pieces of the richest looking ore yielded \$761.47 silver per ton, while the assay of the mass gave at the rate of \$142.18. The richest mass of the queer ore contains 3¼ per cent. of silver.

From *Tresspass*, May 24th: The following is the assay of several tons of ore worked by the Knickerbocker Co., during the past winter: Storm King, \$295.44; Pleiades, \$268.20; North Star, \$139; Indianapolis, \$104.43; Crown, \$168. The Knickerbocker is not running at present.

In the Twin River Dist., the Murphy mill is hard at work. For the months of November and December, the mill crushed 626 tons of ore, averaging \$132.43 per ton. For the quarter ending March 31st, 1,161 tons were reduced, averaging \$84.18 per ton.

In Park Cañon, North Twin River Dist., the La Plata Co. is prosecuting work on their claims—the Twin Ophirs—with great success. This company recently purchased the 15-stamp mill belonging to the Confidence Co., which was situated in Yankee Blade, and have removed the same to Park Cañon—so we may soon expect to see large shipments of bullion from this quarter.

Considerable bullion is now being shipped from San Antonio Dist. The Rigby Bros. are at work upon the mines on Petaluma Hill.

In the Hot Creek Dist., the Merrimac and Indian Jim claims are the most thoroughly developed, and look well. These two companies have united for the purpose of prospecting the Indian Jim ledge, and they are now down a considerable depth. The prospect is good for the erection of a mill the present season upon these claims, as there is already a sufficient quantity of ore on the dump to supply a mill for a long time.

Ore has been hauled from Reveille Dist. to Austin, which yielded \$300 per ton. The Manhattan Dist., discovered last year, is said to have some splendid ledges, many of which are from 50 to 60 ft. wide.

In Mammoth Dist., there are two or three Eastern, and several private companies at work—all with flattering prospects.

#### Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From *Enterprise*, May 21st: The shaft in the Neagle and Corcoran mine, is down 160 ft.; the hoisting is done by means of a whim: They intend to sink 40 ft. further, when they will run a drift to the lead. At the depth of 83 ft. a drift was run into the lead and some very fair looking ore extracted. Samples obtained in this drift have assayed \$15, \$25, \$40 and as high as \$331 per ton. There is a pile of eight or ten tons of it lying near the shaft. There is but little trouble with water. The ledge when cut at the depth of 200 ft. will doubtless show still better ore.

Same of 22d: Three drifts are now being run from the engine shaft of the Gould & Curry mine—one east, one north and one south. The work of sinking is continued in the shaft. It is the intention to keep on sinking the main shaft until the west casing of the ledge is cut. In order to sink to so great a depth, heavier pumping apparatus than that now in use will be necessary; accordingly heavier machinery has been ordered and will be put up in the course of a month or six weeks.

Same of 23d: Work has been resumed on the Monte Cristo, a lead that cut quite a figure in 1860 and '61.

Same of 24th: The Occidental mine has yielded during the last 16 months, \$300,000, and is now paying \$20,000 per month. The claim contains 1,800 ft.; a tunnel taps the lead 400 ft. below the croppings, at a perpendicular depth of 300 ft. Ore has been extracted from the croppings to the depth of 100 ft. for a distance of 600 ft. along the ledge, northward from the incline leading down from the outcrop to the tunnel. There yet remains, north of the incline and above the tunnel, a body of ore 300 ft. in height and 600 ft. in length. South of the incline lies untouched an immense sheet of ore, reaching up from the tunnel to the croppings—400 ft.—and extending south to an unknown distance. The lead is about 40 ft. in width and the pay stratum has an average width of about 12 ft., yielding ore averaging \$25 per ton. Quite a lengthy account of this mine was given on page 162 of this volume, and in previous numbers.

Same of 25th: During the past week, Wells, Fargo & Co. have shipped from this city and Gold Hill over 8½ tons of silver bullion, worth \$536,770.40.

From *Tresspass*, May 23d: The Hoosier State mill is again in motion, greatly enlarged. Its former capacity is 15 tons per day; but the improvements render it a 40-ton mill. Its present machinery is as follows: The motive power is an engine of 80-horse power, 14 in. cylinder and 20 in. stroke of piston rod, which runs 18 stamps, 27 pans (including four new Greely pans), three agitators and two 7½ ft. settlers. Fourteen vats for settling and slum, and a corral for tailings, render certain the securing of all the precious metals in the ore. The work has been done by the contractor, Frank Denver. The mill is owned by Clark & Lynch, and will work Chollar ore.

The Marysville *Appeal* says the machinists at the Marysville Foundry are putting the finishing touches upon two steam engines of 120-horse power, for hoisting at the Yellow Jacket mine, Gold Hill, Nevada. These engines are connected by one shaft, and run by "link-motion," which is necessary for hoisting out of shafts over 1,200 ft. deep. It is estimated that these engines will hoist a car with safety from a depth of 3,000 ft.

#### UTAH.

From the Salt Lake *Vedette* of May 18th: We were yesterday shown the result of 15 pans' washing from the placer diggings in Bingham county. An old California miner says that in all the dry gulches and hill-sides may be seen evidences of the existence of gold, which will yield from the color to 30 cts. per pan. He thinks that if water is turned in, good \$10 diggings will be found.

The Rush Valley mines, Tooele county, are as yet comparatively undeveloped. A large amount of money has been expended in experimenting on furnaces and apparatus for working ores. Messrs. Storck & Wehereing, from Germany, are now erecting and have been successfully working their cupel or blast furnaces.

Shafts have been sunk on the Silver King lode 165 ft., and a tunnel run into the lode at another point 140 ft., from which great masses of ore have been taken. Messrs. Chase & Paxton are sinking a shaft on the Quandary lode to the depth of 75 ft. Assays by Storck & Wehereing prove the richness of that lode. Native silver was shown to us in ore of the Hard Times lode and very rich ores from many others; and it is only a question of time when an immense quantity of silver and lead will be shipped from these mines.

**MINERAL SPRING WATERS.**—The fabrication of the most celebrated German and French mineral spring waters has recently been commenced at No. 529 Jackson street.

Modern chemical research has accomplished the problem of a close imitation of the waters taken from the natural springs, both in their elements and medicinal effects. Kissinger, Vichy and Selters have already been introduced to the public, and have been favorably received.

**BLACK DIAMONDS.**—The diamonds used for the "Annular Drill" are the black Siberian variety, said to be much the hardest of all the diamonds, though least valuable as gems. The drill, as now constructed, advances about three-quarters of an inch per minute, however hard the rock may be.

**MONEY FROM THE MINES.**—The Gould & Curry, during the past six years, has yielded, in round numbers, 220,000 tons of ore, averaging \$59 per ton, or a total of \$13,627,000. This is at the rate of about \$2,270 a day.

## Order Bussey's Combination Burglar and Powder-Proof Keyless Lock!

### REASONS WHY.

- 1st. It is the best Combination Lock known.
- 2d. It is impossible to pick it.
- 3d. It can be subjected to over half a million changes, and when run by a burglar, he is so acuter entrance than when he began.
- 4th. It has no key to lose.
- 5th. The more it is used the better it is liked.
- 6th. It has no signs, letters or figures, on its face.
- 7th. It is the simplest to understand.
- 8th. It is impossible to open it without knowing the set.
- 9th. It is least possible to get out of repair, as any one will be convinced on examination.
- 10th. It is the strongest Lock.
- 11th. No possible derangement of combination can be made.
- 12th. Amador County has adopted this Lock for its safes.
13. It received a special premium at State Fair.

### Opinions of the Press and others in regard to Bussey's Combination Lock.

The Bank of British Columbia ordered the first one of these locks introduced in this city, and the following recommendation has been received by the inventor:

BANK OF BRITISH COLUMBIA.  
San Francisco, May 24, 1866.  
Recently, two of Wm. C. Bussey's new Patent Combination Burglar-Proof Locks were placed upon the vault doors of the Bank of British Columbia. They are found to operate with all the efficiency claimed by the inventor, and in every way merit our fullest approval. They were ordered upon mature deliberation, after strict investigation of their merits, in comparison with some of the most noted and popular old styles of combination locks.

We deem the lock entirely burglar-proof. It is strong in construction, without intricate or delicate parts, with simple and easy movement. We find no difficulty in either opening or closing it, nor in changing its combinations, which may be made almost innumerable.

As a California invention of extraordinary merit, we take pleasure in recommending it to public attention, believing it to possess all the advantages which are claimed for it.

WM. H. TILLINGHAST, Sub-Manager.  
We do hereby certify, that Wm. C. Bussey's Combination Lock is the best Safe Lock in existence, and impossible to be picked. We have applied several to Vaults and Safes, to entire satisfaction to parties interested.

KITTREGE & LEAVITT,  
Pioneer Iron Works, cor. Fremont and Market sts.

SAN FRANCISCO, May 6, 1867.  
I do hereby certify, that Mr. Wm. C. Bussey's Combination Lock is the simplest and strongest in construction, and the least possible to get out of repair; and for Safes and Vaults in every other respect as good as any other improved combination lock which I am acquainted with.

JOHN R. SMITH,  
Vault Manufacturer, Oregon street.

JACKSON, April 27, 1867.  
I, the undersigned, Sheriff of Amador County, do hereby certify that I am using one of Wm. C. Bussey's Keyless Combination Locks on my safe, which is made to draw four bolts with facility. I believe the lock to be the best lock ever invented, for the following reasons:

- 1st.—Because it is impossible for either burglar or expert to pick it.
- 2d.—The lock being constructed without a key-hole, it cannot be blown to pieces by powder.
- 3d.—There is no possibility of deranging the combination by breaking off, or attempting to drive the knobs into the safe. And it is in fact the nearest approach to perfection yet arrived at in the art of Lock making.

R. COSNER.  
Attested by J. C. SHIPMAN, County Clerk.

JACKSON, April 27, 1867.  
The undersigned, Treasurer of Amador County, do hereby certify, that I am now using one of Wm. C. Bussey's Keyless Combination Locks. It is fastened to the outside door of the Treasurer's Safe. I have no fear of any burglar gaining a knowledge of the set of the combination, when locking or unlocking the same. If I desire to have access to the safe every few minutes, I can adjust the combination as to open this lock in two seconds of time. I am exceedingly well pleased with the same, and I deem this lock to be all that the inventor claims for it.

OTTO WALTHER.  
Attested by J. C. SHIPMAN, County Clerk.

CALIFORNIA LOCK ARCADE.—A special premium was awarded Mr. W. C. Bussey, for his superior Combination Powder and Burglar Proof Safe Lock, at the recent State Fair. We are sure no award was ever more meritoriously bestowed. This Lock was described of length in the Press several months since. At that time it was adopted by several banking houses in this city, and we are now assured that the remarkable claims asserted in favor of the Lock at that time, have been confirmed since by its practical use. We remark an interest in this California invention, and wish to see it speedily meet with the success it is ultimately certain to attain. Mr. Bussey, having properly first fairly tested his lock in California, is now desirous of introducing it in the East, and offers to dispose of the right for several States at very reasonable rates.—[Mining and Scientific Press, Sept. 29, 1866.]

They are the only SAFE LOCK ever invented. Every State and County treasury vault, and every bank and business place should have one.—[Amador Ledger.]

This is a lock in which a series of rotating annular tumblers is employed, and it consists in a novel arrangement of such tumblers in connection with one or more arms connected with one or more bolts, whereby an extremely simple and effective lock is obtained; presenting an almost unlimited number of combinations. For which he was awarded a special premium at the State Fair.—[Sacramento Union.]

We, the undersigned, practical Locksmiths, unhesitatingly pronounce Bussey's Improved Combination Burglar Proof Lock to be the most reliable lock constructed.

F. MARSH & C. F. ISHREL,  
No. 18 Post street.  
REFERENCES:  
R. COSNER, Sheriff.  
O. WALTHER, Treasurer.  
W. JENNINGS,  
C. H. INGALLS, Supervisors.  
L. MC LAINE.

Any good blacksmith can put this lock on safe doors. Boxed or single old locks removed and this placed in their stead, to work one, two, three or four bolts, as the case may be.—[See page 320 in Pacific Coast Directory.]  
A deaf or blind man can open this lock when he knows the set and understands the full manipulation, without any expert detecting the combination.

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## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

C. W. M. SMITH. W. B. EWER. A. T. DEWEY.  
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**American and Foreign Patents.**—Letters Patent for Inventions can be secured in the United States and foreign countries through the Mining and Scientific Press Patent Agency. We offer applicants reasonable terms, and they can rest assured of a strict compliance with our obligations, and a faithful performance of all contracts. For reference, we will furnish the names of numerous parties for whom we have obtained patents during the past two years.

## Canvassing Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting our Agents in their labors of canvassing, by lending their influence and encouraging favors. We shall send none but worthy men.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office, Jan. 11, 1866.  
Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon, Dec. 1, 1865.  
Mr. D. E. Smith is a duly authorized Agent for this paper, February 25, 1867.

## San Francisco:

Saturday Morning, June 1, 1867.

## Notices to Correspondents.

W. M.—Money, or coin, was not made until a comparatively late period of the world's history; and it is supposed that it was first cast in molds—not stamped with dies. Thus we learn from Herodotus that prior to either of the modes named being adopted, "the gold and silver were melted, and poured into earthen vessels, and these, when filled, were removed, leaving the metal in a solid mass. When any was wanting, a piece was broken off of the vase required for the occasion." This was probably about 500 years before the Christian era. Some time about this period the same author relates the following anecdote about Croesus, King of Lydia, whose name has been proverbially associated with riches: "When Croesus sent his Lydians from Sardis to consult the oracle of Delphi, they were received with hospitality by the family of the Alcemæonides, at Athens, and, on their return, acquainted their master with the kindness they had experienced. A member of that family received an invitation to visit Croesus, and, on his arrival, was presented with as much gold as he could carry. To improve the value of the gift, Alcemæon made use of the following artifice: Providing himself with a large tunic, in which were many folds, and with the most capacious buskins he could procure, he followed his guide to the royal treasury. Then, rolling himself amongst the golden ingots, he first stuffed his buskins as full of gold as he possibly could; he then filled all the folds of his robe, his hair, and even his mouth, with gold dust. This done, with extreme difficulty he staggered from the place, his swelled mouth and projections resembling anything rather than a man. When Croesus saw him, he burst into laughter, and not only suffered him to carry away all he had got, but added to it other presents equally valuable." From this story we learn the fact that the wealth of Croesus was principally in gold as found in nature.

YOUNG MECHANIC, Grass Valley.—The prize of \$1,000 offered for the best treatise on the resources of California, mineral, agricultural, mechanical and mercantile, and the most economical and judicious advancement of their development, which has been announced as having been offered by the Mechanics' Institute of San Francisco, has not, as far as we are yet informed, advanced further than the crude idea. At least, so far as we can learn, no announcement has yet been publicly made as to the conditions which competitors will have to observe, nor the principal topics which it is proposed should form the chief heads of their discourse. Nor are we aware that any selection has yet been made of the parties whom it is proposed should adjudicate upon the respective merits of the various productions that may be submitted to them in order to obtain the prize offered. Either branch of the preliminaries just noticed is of great importance. It is also a matter of primary consequence that the conditions alluded to should be announced not only as speedily, but also as early as possible, so that the greatest possible number of available competitors may thereby be enabled to avail themselves of this opportunity for distinguishing themselves, not only as regards the utmost space over which they may reach, but also in order that they may possess the greatest amount of available time in order to perfect their observations and labors.

## The Pacific Oil Works.

The large oil mill which has recently been put into operation on King street, near the foot of Third, is one of the most perfect works of the kind in any part of the world. No effort or expense has been spared to make it, what it really is, a perfect success.

## THE EXTRACTION OF VEGETABLE OILS

From seed, especially the extraction and manufacture of linseed oil, simple as it may appear to the casual observer, is nevertheless an art that is thoroughly understood but by a few even of those who are actually engaged in the business. Until a comparatively recent date, the extraction and after manipulation of this oil has been done in a very rude, slipshod manner, with very little care for or knowledge of the rationale of the process. It would require many columns to give a detail of the successive improvements, in the way of machinery and manipulation, which have brought this important branch of manufacture to its present high standard. Suffice it to say, that nothing in past experience has been neglected in the construction of the works in this city, while much that is quite novel and important has been introduced here, for the first time.

Mr. P. B. Bruner, the constructing engineer and present managing superintendent of the works, has obtained a thorough education in the business in one of the first class establishments of this kind in America, to which he has since added, by observation, a complete knowledge of the business in Europe.

The engine, from which the power for driving the machinery is derived, and the boilers which furnish steam for the motive power, and for the heating and hoiling operations, are considered equal to any in the city. Every part of the works has been constructed with the most scrupulous care for perfection in the various processes, and economy of time and labor in handling material. The works are designed for expressing the oil from all kinds of seed which may be presented in sufficient quantity, or which may furnish a sufficiently valuable commercial product.

## OIL FROM MUSTARD SEED.

The machinery was first started on mustard seed, some 150 tons of which were put through in two lots of seed, one black and the other white. The white seed yields more oil and of a lighter color, than the black—in proportion of about 36 parts of the former to 28 of the latter. The actual result of the two lots was ten pounds of oil to a bushel or fifty-six pounds of seed. In working for oil alone, the seed is pressed warm; but in working to obtain mustard for table use, the oil is expressed cold. The cold process was used in the above case, the residual cake being taken by two of our enterprising spice manufacturers—Messrs. H. C. Hudson & Co., and Mr. Charles Bernard—by whom it is being prepared for the table. It constitutes a most excellent article for that purpose, and altogether superior to any which can be imported. Mustard seed oil is of a reddish-brown color, heavy body, and nearly odorless. That from the white seed is much lighter in color, than that from the black. This fact, and the great difference in favor of the white in point of yield, would seem to indicate that the white should be cultivated in preference to the black. This oil can be applied to a great variety of purposes—such as oiling wool in the process of manufacture, the lubrication of machinery, the manufacture of soap, for medicine, and for culinary purposes. For the latter it is fully equal to lard, for all uses to which that description of fat is applied. It also makes a most excellent salad oil. There is no limit to the demand for this oil. It is worth, in this market, from \$1.50 to \$2.00 per gallon.

Mustard grows in great profusion and to great perfection in this State. Its collection from the vast plains where it grows wild, might be made a most profitable business; and the establishment of these works hav-

ing furnished a reliable market, it will doubtless soon assume considerable importance among our agricultural productions. The seed is worth from 1½ to 3 cents per pound, depending, as will be inferred from what has been said, upon its character, whether white, black, or mixed, and also upon the manner in which it is cleaned.

## THE PRODUCTION OF CASTOR OIL

Is another proposed branch of the business of this establishment. The plant producing this oil has been known from the earliest period of history. The Egyptians were well acquainted with both the seed and the oil. It is spoken of by Herodotus, and was used as a medicine by Hippocrates. The nature and medicinal character of this oil is so well known to our readers that we will refrain from calling up any reminiscences on that point. Castor oil forms the connecting link between the drying and non-drying oils. In addition to its use as a medicine, it is used, in some places, for illuminating purposes, and is also largely employed as a lubricator. It is held to be the very best oil attainable for the latter purpose, as it never gums, while it possesses a body found in no other oil, animal or vegetable. This fact becomes apparent on heating it in a retort. When so heated as to distil over one-third of its bulk, the remainder is a thick, heavy mass, which becomes solid at the ordinary summer temperature of the atmosphere, having a yellow porous appearance, resembling caoutchouc. The Chinese have a mode of refining this oil so as to deprive it of its medicinal properties, and render it suitable for culinary purposes. The seed yields about one gallon of oil to the bushel, which is worth in this market about two dollars. The cake residue is worth but little, except as a fertilizer. The castor bean is extensively cultivated in the vicinity of St. Louis, Mo. Something like 150,000 gallons are annually imported into Great Britain. The plant flourishes with the greatest luxuriance in this State, and might be made a most important item in the product of nearly every farm. It might be raised to great profit, especially when the crop can be gathered by children, or by Chinese labor. The Pacific oil Mills will afford a regular market for all the castor beans that can be raised, at from three to five cents per pound—a price amply remunerative for their production, even at the cost of high-priced labor.

The chief purpose of these works, however, is the

## PRODUCTION OF LINSEED OIL,

Which is so largely used in the manufacture of paints, varnishes, and printers' ink. This is the most important, and by far the most extensively used of all the vegetable oils. It is obtained from the seed of the common flax, which is also so useful for the very superior fiber which it produces, and from which the linen of commerce is manufactured. This plant is easily raised in nearly all temperate latitudes. The climate of California is especially favorable for its cultivation, although it may not possess quite so good natural advantages for the preparation of the fiber. What is lacking in the one, however, is more than counterbalanced in the other. At the present price of the seed, and taking into account the peculiar adaptiveness of this climate for its culture, it must be a much more profitable crop than either wheat or barley; while the home market alone will reach to fully half a million of dollars annually, to say nothing for its demand for export. The company is offering four to four and a half cents per pound for the seed.

## THE PROCESS OF MANUFACTURE.

Each of the above oil-producing seeds, as well as several others of less importance, requires essentially the same treatment and the same machinery in the preparation of their products for the market. The first process is one of maceration, which is done by passing the seed between sets of rollers so gauged as just to mash the seeds and start the pulp from the hulls or shell. The mass is then ready for the next operation, which is a grinding process, and is performed by passing it under heavy grinding or miller stones, working like the wheels of Chil quartz mills, only upon a platform slightly inclined outward in every direction from the center, instead of in a trough. The stones employed are very large and heavy—measuring about seven feet in diameter and weighing nearly eight tons each. This great weight is required in order to thoroughly break down the little cells which contain the oil, so that it may be more readily expressed. The mashed pulp is fed through a hopper into the center of the bed on which the stones work, and passing outward, underneath them, lodges upon a circular bed or table, from which it is brought

round, by scrapers, to a proper receptacle, whence it is moved, almost automatically, into a gauge box, and from thence, by convenient and rapid manipulation, dropped into a mold placed between a fold of heavy canvas and upon corrugated iron plates, upon which it is transferred to a powerful hydraulic press, where it is subjected to a gradually increasing pressure up to about 600 pounds to the square inch. There are three of these presses, each receiving sixteen molds. The presses are worked by two hydraulic pumps of superior construction and driven by the engine.

When the cake comes out of the presses it is so hard as to be broken with difficulty by the hand. It is first stacked up in piles, as roofing slate is often piled, and subsequently ground up into cake meal as feed for horses and cattle, in which condition it much resembles coarse bran. The oil drips from the molds in the presses into vessels, from which it is conveyed by pipes into large receiving vats, from which it is subsequently pumped into boilers for its final preparation for the market. The present capacity of the mill is equal to a consumption of over 600 bushels of flaxseed per each twenty-four hours of running time, or its equivalent in either mustard or castor beans. This is equal to something over 200,000 bushels per year. The building and power is sufficient for doubling this capacity, at small expense, whenever occasion may require. All seeds of home production are purchased by the company as fast as offered, and at prices already named; but of course, for the present, they are dependent mainly upon foreign markets for their chief supply.

For a further description of these works, and a notice of some of the improvements introduced, we must refer to our next issue.

FACTS ABOUT PATENTS.—We commence, with the present issue, the re-publication of a very valuable series of articles on Patent Matters, written in 1863, for the *Prairie Farmer*, by W. E. Dodge, Esq., of Washington, and formerly an Examiner in the Patent Office. We trust our readers generally will peruse these articles with attention. There is a general lack of information on the subject of patent matters which should be supplied, and a kind of mystery surrounding them which should be thrown aside. Some of our most valuable improvements have been made by ordinary mechanics, ignorant of their real value, who have been swindled out of the just rewards of their genius by unprincipled men who have subsequently taken up their ideas, perhaps slightly changed or modified them, and eventually patented them as their own, while the real inventor has got nothing for his trouble. These things are generally the result of a lack of familiarity among mechanics generally with the nature of our patent laws, and the manner in which inventors may obtain the benefits which those laws are designed to convey.

These articles contain a few plain and simple directions, by which any person of ordinary intelligence will be enabled to know when he has made an invention and how to proceed to obtain the necessary protection provided therefor by the national patent laws.

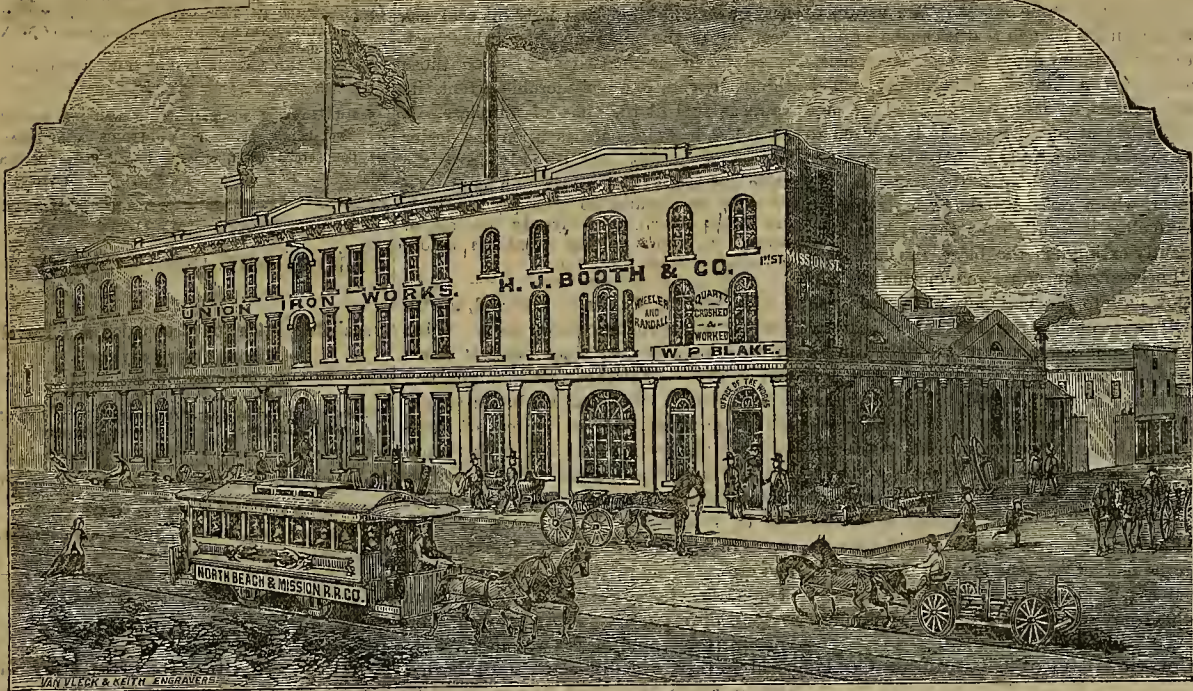
In order to give the reader some idea, in advance, of the value and character of the articles which we purpose to reprint, we append a brief synopsis of the subjects which will be considered: What is a Patent? History of our Patent Office; The Object and Operations of Patent Laws; What may be Patented; How to Obtain a Patent; The Preparation of the Case; Examinations, Appeals, etc.; Some of the Evils Connected with the Patent Office; The Necessity of the Employment of Competent and Honest Agents, etc.

THE MEDALS.—We had the pleasure, a few days since, of examining, at the shop of W. E. Goldsmith, No. 505 Montgomery street, the beautiful gold, silver and bronze medals which were awarded, on Thursday evening last, to such boys at the Lincoln school as had reached the standard of merit required for such distinction. These medals were made by Mr. Goldsmith, and are done in the highest style of the art. Thirteen medals were awarded—one of gold, eight of silver, and four of bronze, besides seventeen diplomas. Charles W. Northrup was the recipient of the gold medal.









Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. E. Eckart's Balance Valve for Stationary Engines, Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.** Locomotive, P.e, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenas Wheeler's Improved flat bottom pan, Beldin's pan, Veatch's tubs, Prater's concentrators, Wakie's pans, Beers' pan, German Barrels, Aratra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Fans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of Iron. All work done in the best manner at the lowest cash prices.

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**PALMER, KNOX & CO.,**  
**Golden State Iron Works,**  
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SAN FRANCISCO.

MANUFACTURE ALL KINDS OF  
**MACHINERY.**  
**STEAM ENGINES AND QUARTZ MILLS.**  
DUNBAR'S IMPROVED  
**Self-Adjusting Piston Packing,**  
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

**WHEELER & RANDALL'S**  
**NEW GRINDER AND AMALGAMATOR**  
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**AMALGAMATOR AND SEPARATOR,**  
**Tyler's Improved Water Wheel,**  
Giving the greatest power, at lower cost, than any wheel in use. There are over 1,500 running, giving universal satisfaction.

**KNOX'S AMALGAMATORS,**  
WITH PALMER'S PATENT STEAM CHEST,  
Superior for working either Gold or Silver Ores.  
**Genuine White Iron Stamp Shoes and Dies**

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ore, or saving either gold or silver.

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MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.  
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Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.  
**Dunbar's Patent Self-Adjusting Steam Piston**  
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MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.  
Special attention paid to Repairing. 25 qy-3

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**Marine and Stationary Engines**  
Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.  
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Wine, Cider, Cotton and Tobacco Presses of the latest Improved Patterns.  
**STEAM ENGINES AND BOILERS,**  
Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.  
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**Steam Boiler & Sheet Iron Works.**

THE only exclusively Boiler Making establishment on the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for new Work and the repairing of Old Work, executed as ordered, and warranted as to quality. Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

**CALIFORNIA BRASS FOUNDRY.**  
No. 125 First street, opposite Minna,  
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ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings. Brass Ship Work of all kinds, Spikes, Sheathing, Valve Rudder Braces, Hinges, Ship and Steamboat Belts and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and those Couplings and Connections of all sizes and patterns, furnished with dispatch.  
PRICES MODERATE.  
V. KINGWELL. 18v13-ly J. H. WEED.

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MANUFACTURE  
**STEAM ENGINES,**  
QUARTZ MILL MACHINERY OF ALL KINDS,  
**SAW MILLS, FLOUR MILLS,**  
**Dunbar's Improved Self-Adjusting**  
**PISTON PACKING,**  
Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

**HANSCOM'S CRUSHER.**  
The best of the kind now in use in this State or anywhere else.  
**Wheeler & Randall's New Grinder and**  
**Amalgamator,**  
Which only needs examination to be appreciated.  
**Tyler's Improved Water Wheel,**  
Giving greater power, at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.  
All Wheels warranted to give the power as set forth, or the money will be refunded.  
**Sole makers for this coast of the "Pendergast**  
**White Iron Stamp Shoes and Dies.**  
None genuine unless obtained from us. Every one warranted.  
Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.  
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**Moore's Grinder and Amalgamator, Brodie's**  
**Improved Crusher, Mining Pumps,**  
**Amalgamators, and all kinds**  
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**NEPTUNE IRON WORKS,**  
Corner of Mission and Fremont streets,  
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**Locomotive,**  
And all kinds of  
**HIGH PRESSURE**  
**Steam Boilers**  
MADE  
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.  
All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.  
**Old Boilers Repaired**  
**D. CAMERON.**  
6v12-ly

**A NEW ENTERPRISE.**—The Folsom Telegraph notices the establishment at Folsom of a manufactory for slate paint and roofing—a new material now being extensively used by the Pacific Railroad Company for painting the roofs of cars, depots and bridges. This paint is made from slate rock, which is ground and then mixed to the required consistency with coal tar. This paint is said to be impervious to water, and improves, and is rendered almost indestructible by the ordinary heat of the sun. For roofing purposes it is said to be far superior to shingles, tin or slate. It is laid on roof-felting, for roofing purposes with a trowel, the same as mortar is ordinarily used, and of about the same consistency, about a half or an inch thick, and can be laid on as thick as may be required, thus forming a perfectly smooth surface; it soon dries and hardens with the heat of the sun and the atmosphere, and the older it gets the harder, and in fact, through the action of the elements becomes perfect stone.

**MINING EXPLOSIONS** are rare in this country, from the very limited number and depth of bituminous coal workings. The late explosion in the Clover Hill mines, Chesterfield, Va., is, however, a sad warning, and proves that stringent regulations and improved safeguards are matters of deep interest in this hemisphere as well as the other. Our bituminous coal beds are of vast extent, and destined yet to be extensively worked as the coal fields of Europe. It seems, in this instance, that gross neglect of both rules and specific orders caused an inexcusable calamity, by which sixty-nine persons were cruelly put to death. The removal of the door that closed a disused gallery, and neglect of an order to replace it, and a further neglect on the fatal day to make the regular examination for dangerous gas at the same place, were the conditions naturally leading to the possibility of a disaster which might otherwise have been prevented.

It is stated that although more than three months have elapsed since the explosion of the Oaks Colliery in England, little progress has yet been made in extinguishing the body of fire raging at the bottom. All the shafts have been sealed up.

**TOWNE & BACON,**  
**Book and Job Printers,**  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices  
In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**  
F. CLERC, B. KREINCLAUS, W. DEBRIE.  
**CLERC & CO.,**  
Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.  
No. 28 FREMONT STREET, San Francisco.  
9v142m

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**MARINE ENGINES,**  
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**MACHINERY FORGING.**  
All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed.  
18v14-17

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**Steam Engine Works,**  
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**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.  
**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.  
The attention of the parties engaged in shipping or inland navigation is called to the  
**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular.  
25v12-3m



**TO KEEP HAMS.**—It is said that hams may be most perfectly kept in the following manner: As soon as the hams are thoroughly smoked, cut them up into thin slices, remove the bone, partly fry, as if for the table, then pack the slices in a stone jar, pour on the melted grease and as much lard as is needed to cover it all, and set away in a cool, dark place. Only one thing will disturb it. It will be so handy to put on the table that the cook will be likely to make frequent calls.

**MINERALS IN UTAH.**—Utah is thought to be very rich in minerals, and from them her people expect valuable returns. The Salt Lake *Vedette*, speaking of its immense lead mines, recommends the establishment of manufactories for sheet lead, lead pipe, shot, etc. The lead discovered is rich in silver.

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PHOTOGRAPHER,  
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Enamelled Cards, Ambrotypes and Sun Prints, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cards de Visite only 25¢ per dozen; Vignettes at 50¢ per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

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IMPORTERS,  
AND DEALERS IN  
**ASSAYERS' MATERIALS,**  
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Photographic Stock, Etc.  
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WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

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And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUPPLIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1866 11v10-1f

**The Mercantile Gazette**  
—AND—  
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**ON THE PACIFIC COAST.**  
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For enclosure in letters, is also published every  
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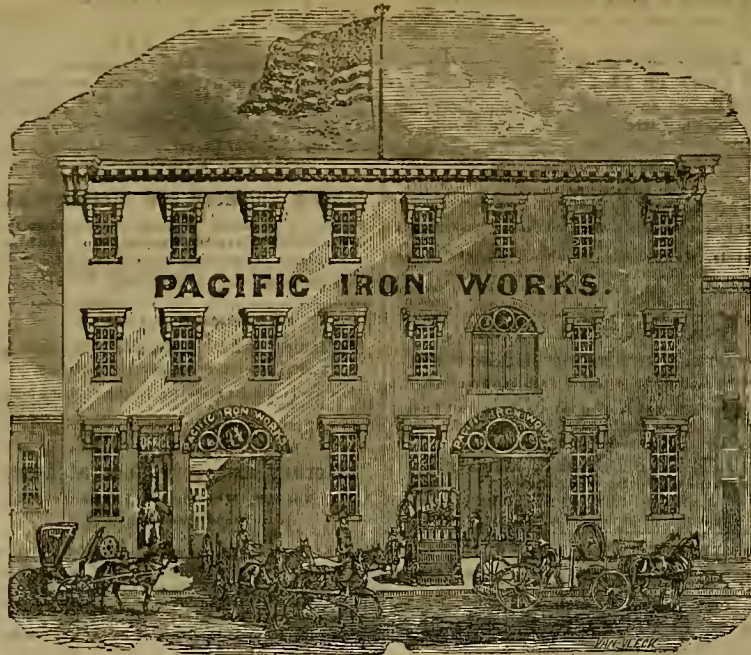
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**BLASTING POWDER!**

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**IN MARIN COUNTY,**  
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FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
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414 Front Street, San Francisco.  
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**Copartnership Notice.**

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO. for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and equipped facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully Solicited.

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**CHURCH & CLARK,**  
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**EXCLUSIVE AGENT**  
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A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory  
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ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
VERY FINE WATCHES FOR LADIES.  
A large assortment of Gold Chains  
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IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly  
Come and see it, or send for Report of the trial.  
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**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**  
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GOLD QUARTZ MINE, SITUATED IN CALAVERAS  
County, with steam mill fitted up with Amalgamating  
Pans, etc. FOR SALE. The mine has three main veins, and  
more than 250,000 have been spent in opening them and com-  
pleting the mill. Good wagon road all the way. Apply to  
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On Saturday, February 9, 1867,  
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**Cloth Cashmere Hat**  
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Which are the most dressy Hat ever introduced on the  
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the city to stop at. The Beds are new and in good order,  
and the Rooms well ventilated. The Table will always be  
supplied with the best in the market.  
Prices varying from \$1.50 to \$2 per day for  
Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED  
TO THE HOUSE.  
Teams belonging to the House will be in attendance  
at all the boats and cars to convey passengers to the House  
free of charge, and to any part of the city for 50 cents.  
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THE PHILOSOPHY OF MARRIAGE, BEING FOUR IM-  
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QUARTZ MILLS. FLOUR MILLS,  
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POWDER MILLS. PAPER MILLS,  
Steam Engines of all Kinds,  
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OIL WELL TOOLS. ROCK BREAKERS,  
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Machinery and Castings of all kinds, either  
of Iron or Brass.  
Boilers and Sheet Iron Work in all its  
Branches.

Shoes and Dies of White Iron, manufactured  
for and imported by us expressly for this pur-  
pose, and will last 25 per cent. longer than any  
other made on this coast.

Rough Iron Screens, of any degree of fineness.  
We are the only manufacturers on this coast of  
the "Hicks Engine," the most compact, simple  
in construction, and durable, of any Engine in  
use.  
W. H. HOWLAND. E. T. KING,  
H. B. ANGELL. CYRUS PALMER.  
13v14-4r

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Maker for all branches of mechanics. Repairing done at  
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Repairing promptly and neatly attended to.  
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**MANUFACTORY,**  
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Files Recut and warranted as good as new, or no charge.  
The only establishment in the State. We also man-  
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**Practical and Analytical Chemistry**  
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**THOMAS PRIOR,**  
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(Formerly of the Normal College, Swansea.)  
WILL GIVE PRACTICAL INSTRUCTIONS IN QUALI-  
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to METALLURGY, MANUFACTURING ARTS, and MINING  
PURPOSES.  
PHARMACEUTICAL and TECHNICAL CHEMISTRY,  
such as is required by Medical and Pharmaceutical Stu-  
dents, will be taught to such students as may require it.  
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**Course of General Chemistry.**  
Lectures, illustrated with experiments, delivered every  
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For further particulars, address  
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6v12-2ow1f

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**BLASTING AND SPORTING**  
**GUNPOWDER,**  
SUPERIOR QUALITY.

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Office is abundantly supplied with elegant engravings, or-  
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**CAPITAL STOCK, - - - \$500,000**

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THIS COMPANY ARE NOW PREPARED TO FURNISH Sulphuric, Nitric and Muriatic Acids of superior quality, in quantities to suit.

Orders will be received at the office only for Chemicals of every description, which will be manufactured as may be required. The Company has to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed.

## BLAKE'S PATENT QUARTZ CRUSHER.

**CAUTION!**  
The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1886.

This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.

BLAKE & TYLER, Agents for the Pacific Coast.

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## Fine Custom Made Clothing

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AT PRICES THAT DEFY COMPETITION.

Our Stock of Clothing Consists of ALL THE LATEST STYLES

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Leave Hongkong Twice a Month,

On the 1st and 15th to the Northeast Monsoon,

and about the 11th and 29th in the

Southwest Monsoon.)

—FOR—

SOUTHAMPTON AND MARSEILLES,

VIA. EGYPT,

Calling at Singapore, Penang,

Point de Galle, Aden, Suez, Alex-

andrin, Malta and Gibraltar.

From Point de Galle their steamers run to Madras, Calcutta, and Bombay, twice a month, and once a month to King George's Sound, Melbourne and Sydney.

From Hongkong their steamers run constantly to Swatow, Amoy, Poochow, Shanghai, and Yokohama.

Hongkong, 1887.

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W. BARTLING. HENRY KIMBALL.  
**BARTLING & KIMBALL,**  
**BOOK BINDERS,**  
Paper Rulers and Blank Book Manufacturers.  
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16v12-3m SAN FRANCISCO.

**JOHN DANIEL,**  
(SUCCESSOR TO O. GORI)  
**MARBLE WORKS,**  
No. 421 Pine St. bet. Montgomery and Kearny, San Francisco  
Mantels, Monuments, Tombs, Plumber's Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
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General Furnishing Undertaker,  
641 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Barial Caskets and Cases,  
11v

**Palmer's Patent**  
**ARTIFICIAL LEG,**  
Manufactured in Philadelphia, Penn.  
**JARVIS JEWETT, AGENT,**  
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**HUCKS & LAMBERT,**  
SOLE MANUFACTURERS OF THE CELEBRATED  
**H. & L. AXLE GREASE,**  
Natoma Street and North Beach,  
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## PIONEER IRON SHUTTER WORKS!

Established 1849.

**C. NUTTING,**  
Manufacturer of  
**Fire-Proof Doors and Shutters,**  
BANK VAULTS, PRISON CELLS, BALCONIES, AWN-  
INGS, GRATINGS, IRON FENCE, STAIRS, Etc.,  
123 Bush street,  
11v14-1q SAN FRANCISCO.

**HARRIS BROS.,**  
**OUTLERS, LOOKSMITHS, BELLHANGERS**  
And Model Makers.  
208 Leidesdorff street, bet. Sacramento and Commercial,  
SAN FRANCISCO. 21v14-1f

**LEATHER HOSE AND BELTING,**  
ALL SIZES.  
**SUCTION HOSE MADE TO ORDER**  
At short notice, by

**M. M. COOK & SON,**  
No. 801 Battery street,  
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## SAN FRANCISCO Cordage Manufactory!

CONSTANTLY ON HAND A LARGE ASSORTMENT

—OF—

**MANILA CORDAGE,**

Whale Line, Bale Rope, etc.,

Manufactured from Pure Manila Hemp.

Office, at TUBBS & CO'S, 611 and 613 Front street,

Manufactory at the Potrero. 11v14-1q

**ANDRADE & PATTERSON,**

MANUFACTURERS AND ENGRAVERS

—OF—

**METALLIC SIGNS,**

AND SIGN PAINTERS,

Corner of Montgomery and Pine Streets,

SAN FRANCISCO.

Door Plates and Office Signs made to order at short

notice and on reasonable terms. 17v14-1y

**J. M. STOCKMAN,**

Manufacturer of

**PATTERNS AND MODELS,**

(Over W. T. Garratt's Brass Foundry.)

S. E. Corner of Mission and Fremont sts.,

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**EMERY & EATON'S**

**GREEN SEAL SMOKING TOBACCO.**

16v14-6m No. 518 Battery street.

## GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.

SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN

every direction, every ten minutes.

The rooms of the House are well furnished, large

and airy, are let by the month, week or day, and are

kept in superb order. There is a Restaurant attached for

ladies and families, where persons can board for one-half

they are required to pay at hotels. 17v13-6m SANBORN & CO

**STOCK CERTIFICATES,**

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And all other Blanks, Blank Books, etc., required by Min-

ing and other Corporations, kept on hand or printed to

order on short notice, at moderate prices, at the office of

the Mining and Scientific Press

## Professional Cards.

**SHERMAN DAY,**  
**Mining Engineer,**  
No. 114 Montgomery Block, San Francisco,  
Will examine survey and report upon mines, and consult  
and advise concerning investments in mining property, or  
the machinery management and expenditures of mines.  
22q

**CHAS. LIEBENAU,**  
**Mining Engineer and Metallurgist,**  
(Graduate of the Mining Academy, Freiberg, Germany.)  
Orn, Flint District, Owyhee Co., Idaho.  
Residence—George Hearst, John W. Gashwiler, Richm.  
Henne & Co., and J. M. McDonald, San Francisco; E. H.  
Purpie, New York; William Bigler, Penn. 14v14-3m

**FREDERICK MANSELL,**  
**Mechanical & Architectural Draughtsman,**  
No. 422 California street, corner of Leidesdorff.  
Drawings of Models made for parties applying for pa-  
ents at Washington or London. mar23-1f

**GREGORY YALE,**  
**Attorney and Counsellor at Law,**  
No. 18 Merchants' Exchange,  
(Battery and Washington streets).

Special attention given to obtaining Patents for Mining  
Lodes under the Act of Congress of July 26th, 1866; and  
Claims filed before the U. S. Registers and Receivers in any  
of the Land Districts in the State, and Contests before the  
Courts, under the Law, attended to. Opinions prepared  
upon all questions relating to Mining Laws. 1v14-1m

## E. V. JOICE, NOTARY PUBLIC.

N. E. cor. of Washington and Battery sts.

12v14-1f SAN FRANCISCO.

**FRANKLIN E. FELTON, JAMES M. TAYLOR,**  
**FELTON & TAYLOR,**  
**Attorneys and Counsellors at Law,**  
Court Block, 636 Clay Street,  
SAN FRANCISCO.  
Will practice in the State and Federal Courts. Special at-  
tention given to proceedings under the Patent Law.  
18v14-1q

**GEO. T. KNOX AND E. V. SUTTER,**  
**COMMISSIONERS OF DEEDS,**

**NOTARY PUBLIC,**  
615 Montgomery Street,  
San Francisco.

**W. E. GOLDSMITH,**  
**Card and Seal Engraver,**  
505 Montgomery street, ap-stairs, (over Tucker's),  
SAN FRANCISCO.  
Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

**DR. H. AUSTIN,**  
**DENTIST,**  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
(OVER SAN FRANCISCO BATHS).  
SAN FRANCISCO. 20v10-4y

**J. W. WINTER,**  
**DENTIST,**  
Office, 647 Clay street.....San Francisco.  
First-class gold fillings for \$3, as good as any dentist can  
produce in the city. Dr. Winter has practiced Dentistry  
twenty years—fifteen in this State. For a full upper set of  
gum teeth, on vulcanite base, from \$20 to \$35. Teeth ex-  
tracted without pain by local application. 18v14-1f

**CUT NAILS.**  
2,000 KEGS ASSORTED SIZES,  
For sale in any quantity, to close invoice, at the very

Lowest Rates, by

**THOS. H. SELBY & CO.,**  
116 and 118 California Street,  
SAN FRANCISCO. 19v14-3m

**ISAAC LOBREE & CO.,**  
**GOLDEN STATE POTTERY,**  
ANTIOCH, CAL.  
Office in San Francisco, 516 Commercial st.  
Constantly on hand a large assortment of Earthenware,  
Fire Bricks, Fire Clay, and Stoneware.  
Is prepared to fulfill all orders at the shortest notice.  
20v14-1f

**New Mining Advertisements.**  
**Adella Gold Mining Company, Rock Creek,**  
Sierra County, California.  
Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-ninth day of  
May, 1887, an assessment of one dollar (\$1) per share was  
levied upon the capital stock of said Company, payable  
immediately, in United States gold and silver coin, to the  
Secretary, No. 422 Pacific street, San Francisco, Cal.  
Any stock upon which said assessment shall remain unpaid  
on the twenty-eighth day of June, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the fifteenth day of July, 1887, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trustees,  
A. C. TAYLOR, Secretary. jel

**Office, 420 Pacific street, San Francisco, Cal.**

## Coco Senores Gold and Silver Mining Company.

Copala, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the first day of May,  
1887, an assessment of ten (10) cents per share was levied  
upon each and every share of the capital stock of said  
Company, payable immediately in United States gold and  
silver coin, to the Secretary, No. 623 Clay street, San Fran-  
cisco, California.

Any stock upon which said assessment shall remain un-  
paid on the thirty-first day of May, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Saturday, the twenty-second day of June, 1887, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of  
Trustees.

EDWARD C. LOVELL, Secretary.

Office, No. 623 Clay street, San Francisco. jel

**POSTPONEMENT.**—The day for deeming stock delinquent on  
the above assessment, is hereby postponed until Saturday,  
the 28th day of June, 1887, and the sale thereof until Satur-  
day, the 27th day of July, 1887. By order of the Board of  
Trustees.

EDWARD C. LOVELL, Secretary.

Office, 318 California street, San Francisco, Cal. jel

## Chiptona Mining Company—District of Ures,

Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-eighth day  
of May, 1887, an assessment of five dollars (\$5) per share  
was levied upon the capital stock of said Company, pay-  
able immediately, in United States gold and silver coin,  
to the Secretary, at his office, No. 318 California street, San  
Francisco, Cal.

Any stock upon which said assessment shall remain un-  
paid on the twenty-eighth day of June, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the fifteenth day of July, 1887, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trust-  
ees.

JOHN F. LOHSE, Secretary.

Office, 318 California street, San Francisco, Cal. jel

## De Soto Gold and Silver Mining Company.

Location of Works: Star District, Humboldt County,

State of Nevada.

Notice.—There are delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
twentieth day of April, 1887, the several amounts set op-  
posite the names of the respective shareholders, as fol-  
lows:

Names.	No. Certificate.	No. shares.	Amount.
Beckman, J. C.	157	10	\$9 00
Beckman, J. C.	158	10	6 00
Bigler, E. A.	632	5	5 00
Byrnes, John	296	5	3 00
Bigler, John	295	10	6 00
Doek, Luther	607	10	5 00
Darby, Thomas	777	10	6 00
Davis, C. W.	750	5	3 00
Fraser, James	163	5	3 00
Fitch, J. B.	368	25	24 00
Glover, G. F. M., Trustee	342	40	24 00
Harris, J. H.	318	50	50 00
Hutchinson, J. R.	328	100	60 00
Quawton, G. H.	329	5	3 00
Patton, W. R.	308	50	30 00
Richards, George	320	5	3 00
Sanderson, George	323	50	30 00
Thomas, Richard	319	10	6 00
Wennerhold, C.	312	5	3 00
Wilson, R. B.	322	10	6 00

And in accordance with law, and an order of the Board  
of Trustees, made on the said twentieth day of April, 1887, so  
many shares of each parcel of said stock as may be neces-  
sary, will be sold at public auction, at the office of the  
Company, No. 58 Exchange Building, northwest corner of  
Washington and Montgomery streets, San Francisco, Cal.,  
on the nineteenth day of June, 1887, at the hour of one  
o'clock P. M. of said day, to the highest bidder, for cash, in  
U. S. gold coin, to pay said delinquent assessment thereon,  
together with costs of advertising and expenses of sale.

JOHN M. BURNETT, Secretary.

Office, No. 58 Exchange Building, northwest corner of

Washington and Montgomery streets, San Francisco, Cal-  
ifornia. jel

## I. X. L. Gold and Silver Mining Company.

Location of Mine: Silver Mountain District, Alpine Coun-  
ty, Cal.

Notice.—There is delinquent, upon the following de-  
scribed stock, on account of assessment levied on the  
thirtieth day of April, 1887, the several amounts set op-  
posite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Jas. Barron	237	10	\$3 00
H. G. Blaisdell	237	10	15 00
H. G. Blaisdell	232	1	1 00
John F. Davis	232	4	6 00
Wm Davidson	237	1 1/2	2 25
C. R. Gallender	214	4	6 00
D. H. Dickenson	294	10	15 00
Ann Hogan	176	7	10 50
J. A. Johnson	237	1	1 50
Isiah Legro	211	5	7 50
Isiah Legro	212	6	7 50
Martin C. M.	212	1	1 50
Geo C McAllister	214	4	6 00
Samuel Nicholson	187	5	7 50
Nells Nelson	166	5	7 50
Abes Newcomb	221	1	1 50
Wm Nelson	221	5	7 50
Chas C Phillips	63	5	7 50
Benjamin Starr	229	1	1 50
Mrs Margaret Bick	236	6	7 50

And in accordance with law, and an order of the Board of  
Trustees, made on the thirtieth day of April, 1887, so many  
shares of each parcel of said stock as may be necessary will  
be sold at public auction, by Olney & Co., auctioneers,  
at Nos. 418 and 420 Clay street, San Francisco, California,  
on Monday, the seventeenth day of June, 1887, at the hour  
of 12 o'clock M. of said day, to pay said delinquent assess-  
ment thereon, together with costs of advertising and ex-  
penses of sale.

S. B. STEVENS, Secretary.

Office, 418 and 420 Clay street, San Francisco, jel

## Office of the Providence Mining Company.

Notice.—The Annual Meeting of the stockholders of the above  
Company, for the purpose electing Trustees, and transac-  
ting other necessary business, will be held at the of-  
fice of the Company, No. 5 Government House, San Fran-  
cisco, on the TWENTIETH DAY OF JUNE, 1887, at 2 o'clock  
P. M., of that day.

F. T. FOLSOM, President.

J. M. BUFFINGTON, Secretary.

San Francisco, May 27, 1887. jel

## Seaton Mining Company.—Location of Works:

Drytown, Amador County, California.

Notice is hereby given, that at a meeting of the Board of  
Trustees of said Company, held on the twenty-eighth day  
of May, 1887, an assessment of one hundred dollars per share  
was levied upon the capital stock of said Company, pay-  
able July 6th, 1887, in United States gold coin, to the Sec-  
retary, at his office No. 60 Exchange Building, San Fran-  
cisco, California.

Any stock upon which said assessment shall remain un-  
paid on the eighth day of July, 1887, shall be deemed  
delinquent, and will be duly advertised for sale at public  
auction, and unless payment shall be made before, will be  
sold on Monday, the twenty-ninth day of July, 1887, to pay  
the delinquent assessment, together with costs of advertis-  
ing and expenses of sale. By order of the Board of Trust-  
ees.

JOEL F. LIGHTNER, Secretary.

Office, No. 60 Exchange Building, San Francisco.

San Francisco, May 28, 1887. jel



## Mining Notices—Continued.

## Batopilas Mining Company, Batopilas District, State of Chihuahua, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment (No. 3) levied on the eleventh day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Ramuel M. Farran.....	1	20	\$40.00
Samuel M. Farran.....	2	20	40.00
Samuel M. Farran.....	3	10	20.00
J. R. Mitchell.....	4	6	12.00
J. R. Mitchell.....	5	15	30.00
Mrs Emma E. Brunt.....	6	50	100.00
Wm E. Dommel.....	7	13	26.00
Wm Gildemeister.....	8	34	68.00
Wm Gildemeister.....	9	19	38.00
Wm J. Springer.....	10	13	26.00
James P. Dyer.....	11	10	20.00
Joseph D. Enas.....	12	25	50.00
A. C. Wain.....	13	4	8.00
R. E. Stoddard.....	14	4	8.00
Chas. F. Brown.....	15	25	50.00
Edward H. Parker.....	16	58	116.00
James F. Hough.....	17	10	20.00
James F. Hough.....	18	25	50.00
Charles F. Schulze.....	19	44	88.00
Teodoro MacCann.....	20	21	42.00
Edward MacCann.....	21	12	24.00
William MacCann.....	22	42	84.00
Charles Pace.....	23	13	26.00
D. D. Shattuck.....	24	13	26.00
Robert Covey.....	25	12	24.00
Arthur M. Ehn.....	26	57	114.00
Charles Dunsberg.....	27	76	152.00
Phillip Donohue.....	28	32	64.00
R. S. Lowe.....	29	49	98.00
Roberta, Morrison & Co.....	30	76	152.00
A. C. Hendley.....	31	126	252.00
Charles J. Vanden.....	32	15	30.00
M. Irvenhoe.....	33	50	100.00
Mrs Carrie M. Coleman.....	34	95	190.00
Mrs Carrie M. Coleman.....	35	63	126.00
Henry Burroughs.....	36	13	26.00
Henry Burroughs.....	37	10	20.00
George Platt.....	38	52	104.00
Edward C. Lovell.....	39	6	12.00
W. D. Williams.....	40	6	12.00
John H. Stevens.....	41	19	38.00
Charles Brum.....	42	25	50.00
George A. Parker.....	43	43	86.00
Thomas A. Hughes.....	44	25	50.00
J. B. Jorgensen.....	45	13	26.00
George H. Bailey.....	46	63	126.00
Charles R. Stout.....	47	18	36.00
Minaret Madigan.....	48	6	12.00
William Lull.....	49	24	48.00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Monday, the third day of June, 1867, at the hour of 2 o'clock, P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. MARTINON, Secretary.  
Office, 811 Montgomery street, up stairs, San Francisco, Cal. my13

## Cordillera Gold and Silver Mining Company, Chihuahua, Morelos Mining District, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of April, 1867, an assessment of one (\$1) dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, No. 321 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-seventh day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.  
Office, 321 Washington street, San Francisco, Cal. my23

## Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Camp, Jas.....	12	5	\$100.00
Drinkhouse, J. A.....	6	3	60.00
Drinkhouse, J. A.....	7	3	60.00
Drinkhouse, J. A.....	8	20	400.00
Harker, W. B. C.....	24	10	200.00
Harker, J. W.....	134	3	60.00
Jacobs, N. R.....	85	4	80.00
Quire, N. C.....	132	5	100.00
Gray, Asaph.....	133	3	60.00
Lander, B. C.....	69	6	120.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. my23

## Diana Gold and Silver Mining Company, Location of Works: Lander County, Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-second day of March, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H. H. Allen.....	235	3	\$15.00
Oliver Ames.....	358	50	250.00
E. T. Andrews.....	259	10	50.00
Henry C. Angell.....	360	10	50.00
T. O. Bateman.....	261	4	20.00
E. G. Hildeman.....	173	88	440.00
Ohas A. Ridgwin.....	190	20	100.00
Henry Blaney.....	362	6	30.00
Geo Wm Bond.....	363	10	50.00
Oliver Brewster.....	364	10	50.00
J. B. Bidleman.....	400	36	180.00
Oliver A. Chapman.....	366	20	100.00
Cadwallader Curry.....	367	80	400.00
Thos Dalry.....	368	50	250.00
George E. Downes.....	319	20	100.00
Wm Endicott, Jr.....	370	10	50.00
Flahers & Chapin.....	368	10	50.00
Wm H. Forbes, Trust.....	371	20	100.00
John Gardner.....	372	20	100.00
A. A. Gilmore.....	273	20	100.00
E. W. Gilmore.....	374	19	95.00
E. W. Gilmore, Trustee.....	375	10	50.00
John Hastings.....	214	10	50.00
John Hastings.....	242	6	30.00
John Hastings.....	243	6	30.00
John Healy.....	376	30	150.00
Alonzo P. Howard.....	377	10	50.00
Wm Prichard.....	402	1	5.00
M. S. Seider.....	378	10	50.00
Geo L. Stearns.....	379	10	50.00
J. H. Stephenson.....	380	33	165.00
J. H. Stephenson.....	381	33	165.00
James Sturges.....	382	10	50.00
Annie P. Sullivan.....	383	6	30.00
Annie P. Sullivan.....	384	6	30.00
Wm S. Titton.....	385	25	125.00
Wm Wheelwright.....	386	6	30.00
Henry Whitney.....	387	6	30.00
E. A. Wild, Trustee.....	388	10	50.00

Names.	No. Certificate.	No. Shares.	Amount.
E. A. Wild, Trustee.....	389	10	50.00
E. A. Wild, Trustee.....	390	10	50.00
E. A. Wild, Trustee.....	391	10	50.00
E. A. Wild, Trustee.....	392	10	50.00
C. C. Walworth.....	393	13 1/2	67.50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of March, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Jones & Bendixen, at the office of the Secretary, corner Front and Clay streets, San Francisco, on the fourth day of June, 1867, at the hour of 12 o'clock, M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, northeast corner Front and Clay streets, San Francisco, Cal. my11

## George Washington Gold and Silver Mining Company, Location of Works: Silver Mountain District, Alpine County, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of April, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Alldorfer, Geo.....	132	3	\$15.00
Alldorfer, Geo.....	133	1	5.00
Alldorfer, Geo.....	134	12	60.00
Huges, Geo W.....	137	6	30.00
Blair, Jos F.....	138	5	25.00
Brayton, J. G.....	139	10	50.00
Brewer, M. T.....	140	25	125.00
Blair, Henry.....	337, 338, 339	5	25.00
Bolts, John.....	340	10	50.00
Cook, A. J.....	341	10	50.00
Cone, J. H.....	342	10	50.00
Caldwell, M.....	343	10	50.00
Chapman, Mrs M.....	344	1	5.00
Chapman, Mrs M.....	345	25	125.00
Coon, M. R.....	346	15	75.00
Coon, M. R.....	347	10	50.00
Carmichael, A.....	348	10	50.00
Carmichael, A.....	349	10	50.00
DeGrady, Wm.....	142, 143, 144	145	725.00
Elde, Nelson.....	146	60	300.00
Genachal, Jacob.....	402, 403, 404	5	25.00
Gilliam, John.....	405, 406, 407	20	100.00
E. J. Hargrave.....	408	5	25.00
Harris, D & Co.....	266, 267, 268	25	125.00
Herbert, Mrs H.....	269, 270, 271	10	50.00
Hastie, Robt.....	272	10	50.00
Hughes, James.....	273	2	10.00
Hughes, James.....	274	2	10.00
Hughes, James.....	275	6	30.00
Hudson, David.....	42, 43, 20-a	40	200.00
Hudson, David.....	409	4	20.00
Hackney, H. W.....	363	5	25.00
Hayward, C. C.....	363	5	25.00
Iverson, Iver.....	154	2	10.00
Iverson, Iver.....	155	5	25.00
Johnson, Deno.....	156	10	50.00
Johnson, Geo W.....	148	3	15.00
Kather, Chas.....	404	10	50.00
Mudgett, John.....	261, 262, 263	5	25.00
McClain, James.....	157	5	25.00
Miller, John.....	162	6	30.00
Miller, J. E.....	406	15	75.00
Miller, Levi.....	284	4	20.00
Montgomery, R. E.....	65	40	200.00
Mead, Jos A.....	197	10	50.00
Mytlet, Jas.....	327	10	50.00
Marshall, J. C.....	330	13	65.00
McClain, James.....	339	25	125.00
McDonell, A. C.....	391	7	35.00
Phillips, W. L.....	275	10	50.00
Ridgour, W. C.....	38, 39, 30-a	30	150.00
Ridgour, W. C.....	39	6	30.00
Ridgour, W. C.....	369	4	20.00
Ridgour, W. C.....	370	5	25.00
Shawalter, John.....	334	15	75.00
Springer, J. S.....	387	10	50.00
Silberstein, M.....	249	1	5.00
Stevens, Andrew.....	unissued	5	25.00
Tyler, Richard.....	158	10	50.00
Townsend, J. B.....	387	10	50.00
Vick, Jos.....	285	10	50.00
Vick, Jos.....	293	5	25.00
Vick, Jos.....	294	5	25.00
Vollett, E. J.....	239	5	25.00
Wyckoff, J. L.....	274	10	50.00
Williams, Samuel.....	280	6	30.00
Williamson, John.....	300, 323, 369	5-a	25
Wilson, D. G.....	332	25	125.00
Wilson, D. G.....	333	5	25.00
Wilson, D. G.....	375	20	100.00
Winkler, C. H.....	376	17 1/2	87.50
York, E. M.....	61, 61-a	4	20.00
York, E. M.....	62	4	20.00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the saleroom of Olney & Co., 418 Montgomery street, San Francisco, Cal., on the third day of June, 1867, at the hour of 12 o'clock, M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. G. WOOD, Secretary.  
Office, 338 Montgomery street, San Francisco. my11

## Hanscom Copper Mining Company, Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of May, 1867, an assessment of twenty-five cents (25c) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the Elina Iron Works, Fremont street, between Howard and Polson, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth (20th) day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN HANSCOM, Secretary.  
Office, at the Elina Iron Works, Fremont street, between Howard and Polson, San Francisco. Office hours: from 8 A. M. to 12 M. my25

## Hope Gravel Mining Company, Location of Works and Property: Grass Valley, Nevada County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment (No. 14) levied on the fifteenth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
McAlmond, E. H.....	32	78	\$78.00
McAlmond, E. H.....	122	10	10.00
McAlmond, E. H.....	135	40	40.00
McAlmond, E. H.....	135	6	6.00

And in accordance with law, and an order of the Board of Trustees, made on the fifteenth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at No. 327 Montgomery street, San Francisco, Cal., on Tuesday, the eleventh day of June, 1867, at the hour of 12 o'clock noon, of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. my25

## Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice.—The Annual Meeting of the stockholders of the above Company, for the purpose of electing Trustees, and transacting other necessary business, will be held at the office of the Company, No. 5 Government House, San Francisco, on the SIXTH DAY OF JUNE, 1867, at 3 o'clock P. M. of that day.

J. M. BUFFINGTON, Secretary.  
San Francisco, May 14, 1867. my18

## Lady Franklin Gold and Silver Mining Company, Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1867, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 305 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. S. LUTY, Secretary.  
Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. my4

## Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of May, 1867, an assessment of two (\$2) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the seventh day of June, 1867, will be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner of Washington and Sansome streets. my11

## Mount Davidson Gold and Silver Mining Company, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. PARDO, Secretary.  
Office, 141 Sutter street, San Francisco, Cal. my25

## Nuestra Senora de Guadalupe Silver Mining Company, Tayoltita, San Dimas District, Durango, Mexico.

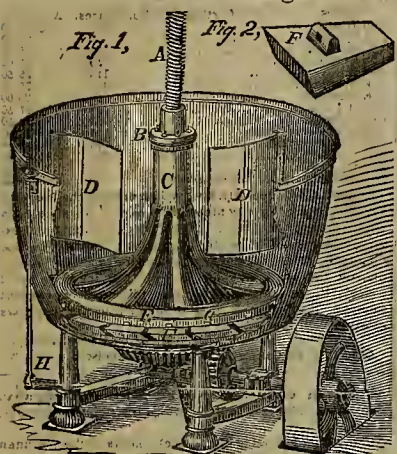
The public is herewith cautioned against buying or negotiating the following described Certificates of Stock in said Company, to wit: Issued to H. Brucings, No. 96, 5 shares; to Wm. Geimann, Nos. 105, 107 and 108, each 10 shares; and Nos. 55, 109, 110, 111, 112, 113, each 5 shares; to Chas. Schunacher, No. 47, 5 shares; and No. 61, 15 shares; and to La Abra Silver Mining Company (New York) No. 156, 550 shares, as said stock has been sold for delinquent assessment (No. 26) at public auction, on Wednesday, May 15th, 1867.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco. my18

## Nuestra Senora de Guadalupe Silver Mining Company, Location of Works: Tayoltita, San Dimas District, Durango, Mexico.



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

**Is the Cheapest and Quickest Pan**  
Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Millers' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation. 3v14t

VARNEY'S  
PATENT AMALGAMATOR.

**These Machines Stand Unrivaled.**

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

**This Amalgamator Operates as Follows:**

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular way between the grinding surfaces and the quicksilver, and the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with the quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the **PACIFIC FOUNDRY,** San Francisco. 1v1

HUNTER'S  
Eureka Amalgamator!

**FOR WORKING THE SANDS AS THEY PASS FROM** the battery. The coarse particles of sand are reduced to pass through a No. 6 screen that would pass through a No. 5 in the battery; the fine four gold is amalgamated on the plates in the machine. The construction of the machine is entirely new. The machine is four feet eight inches square on the bottom, and covered with iron dies 1 1/2 inches thick by four inches wide, extending across the bottom. With alternate strips of wood on end of the same width. The rubbers are made of wood four inches square, and shod with iron and covered with copper plates, with spaces of four inches wide between rubbers. The box is also lined with copper plates. The machine is set in operation by eccentricity giving an oscillating motion; and the rubbers are suspended on iron hangers, and adjusted by set screws.

One-fourth of a horse-power is sufficient to run one machine of ten tons capacity. They do not require any attention to run them, for there is no packing of the sand when the machine stops.

The above machine has been thoroughly tested in the Eureka Mill, Grass Valley. The following order from W. M. WATTS, Esq., of the Eureka Mill, will show his appreciation of the above machine:

"After a trial of two weeks of your Eureka Amalgamator, we have cleaned up and find it has saved seventy-five cents per ton over and above what we got from the copper plates of the other batteries. We run through it all the pulp that passed over the blankets from five stamps. This result is from rock that pays \$30 per ton. I am highly pleased with it, and think it is the best machine after blankets or plates I have ever seen. It reduces the coarse particles of sand, and makes the pulp more uniform in size; it requires very little power to drive it, but the best recommendation I can give it is that I want four more. Will you please go to the Vulcan Foundry and order them. Will you please go to the Pittsburg Company at Nevada City."

The price for a machine with rubbers made, and dies and wood set in the bottom, and all the iron complete, is \$275. The weight is about one ton with cast iron box; but to save freight, the box can be made of boiler iron, saving 500 pounds weight.

Orders sent to the Vulcan Foundry, the Union Foundry, or the Fulton Foundry, First street, will be promptly attended to.

ANDREW HUNTER, Patentee. 3v14t

HUNTER'S  
IMPROVED CONCENTRATOR.

**THE INVENTOR OF THE ABOVE RECENTLY IMPROVED** Machine, is now prepared to take contracts for concentrating gold or silver ores, and will guarantee a certain per cent. of the sulphurets as may be agreed upon; and will guarantee twenty per cent. more sulphurets than from any rocker or concentrator built on the Pacific coast, saving at least ninety per cent. of the sulphurets contained in the ore. The sulphurets, if desired for shipping, will contain less than one per cent. of sand.

One of these Machines can be seen in operation at the Union Foundry, in this city, up stairs. 1v14

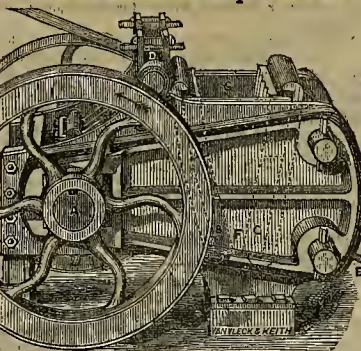
**Steam Pumps,**  
FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

**PICKERING'S GOVERNORS**  
For Steam Engines.

**Giffard's Injectors,**  
For Feeding Boilers.

**STODDART'S IRON WORKS,**  
Beale Street, San Francisco. 2v12 3m

## Brodie's Patented Improvements.

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENT IMPROVED QUARTZ CRUSHER.**  
The attention of all interested in Mining is respectfully called to this Improved Machine for breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertiser is enabled to offer these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than walnut—\$1,000

No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour..... \$500

No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour..... \$1,200

**EXPLANATION OF THE ABOVE ENGRAVING.**  
The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, is adjustable to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, gives the movable jaw, B, a forward and downward motion at the same time, which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County.

RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1866.

JAMES BRODIE, Esq., San Francisco—My Dear Sir: I beg to pleasure to inform you that I have, for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely meeting my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1864. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st No. 1866, the royal charter of the said Barrel, using the same will be reduced to the sum of \$100 per Barrel.

A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1865.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press, of Sept. 29, 1865.

**BRODIE & RADLIF,**  
Express Building, 402 Montgomery street, San Francisco. 12v13d

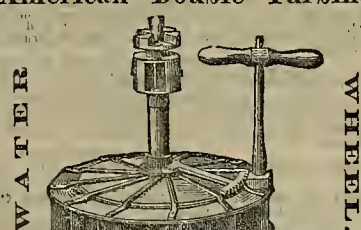
## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the valve facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C. The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of water more than with the pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, are for sale by

120 Front street, San Francisco  
These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public, that the illustration and description of this Pump, published every other week in this paper. 1v14t

LEFFEL'S  
American Double Turbine

**THESE WHEELS, UNEQUALLED AND UNRIVALED** in the United States or the world, have been fully tested on the coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REPRESENTS—E. Stockett, Folsom; O. Simmons, Oakland; Mill at Clear Lake; Moran, Vallejo; Lexington, Santa Clara County; J. Y. McMillan, Lexington, Santa Clara County. 3v14t Send for Circular to

**KNAPP & GRANT,**  
Agents for California. 2v13 1yq 310 Washington street, San Francisco

## FOR SALE!



**PATENT RIGHT OF HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to  
**E. O. HUNT,**  
28 SECOND STREET,  
San Francisco. 1v14

## To Quartz Miners and Others.

**NOTICE!**  
I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention would be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v14 3m

**JAMES HITCHENS.**

## QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

## First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or **J. E. HITCHCOCK,** Millwright, Russ House. 19v14 3m

DUDGEON'S  
PATENT  
Hydraulic Lifting Jacks

—AND—  
**BOILER PUNCHES,**

10v14 Eighth street, cor. Minna. q

BLAKE'S QUARTZ BREAKER!  
PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—BY—  
**WM. P. BLAKE,**  
Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

STRONG & CO'S  
CELEBRATED UNION PAN!

A fast Grindler and thorough Amalgamator; has double Millers, Rolling Shoes and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 200 pounds, tested by "2v13 G. W. STRONG, Assayer.

NELSON & DOBLE,  
AGENTS FOR

**Thomas Firth & Sons' Cast Steel, Files,**  
Etc., Shear, Spring, German, Flow, Blister and Toe Calk Steel; manufacturers of  
**Mill Picks, Sledges, Hammers, Picks,**  
Stone Cutters', Blacksmiths' and Horse Shoers' Tools,  
319 and 321 Pine Street,  
Between Montgomery and Sansome, San Francisco. 10v14q

V. CUSHING, Agent  
For the Purchase and Shipping of Machinery

OF ALL KINDS. 1v14 3m

**SPECIAL ATTENTION GIVEN TO QUARTZ MILL** Machinery and Findings, and Miners' Material of every description. Being a PRACTICAL MACHINIST, and giving my personal attention to the execution of orders, I can guarantee the BEST class of work at the LOWEST PRICE in the city. Office, No. 120 Front street, San Francisco. 8v14t

REMINGTON'S ARMORY.  
Agency, 310 Washington st., San Francisco.

**PRICES REDUCED!**

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 4 1/2 to 6 inch barrel; Rifle Canes—an entirely new Arm—having a strong and accurate equal to a rifle, and most perfect Cane. All the new models for sale very low. 12v13d

**ALBERT E. CRANE.**

## To the Mining Community.

**THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS** constant practice in the Mining business, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 951 Harrison street, San Francisco. 16v14q

**WILLIAM WILLIAMS,**  
Practical Mining Engineer.

## The Abrogation of all Mine Taxes.

In reply to a resolution introduced by Mr. Conness into the United States Senate, the Secretary of the Treasury, Mr. McCulloch, on March 25th, transmitted a letter to the Senate relative to the taxation of mining interests, and in such letter he incloses what he terms a very interesting communication which has recently been received from Louis A. Garnett, of this city, who was formerly an officer in the Branch Mint here, but now connected with a very extensive silver refinery, which communication was prepared at the suggestion of John Jay Knox, of the Treasury Department, during his late visit to this State. In this communication, Mr. Garnett urges "a complete abrogation of all taxes and restrictions upon mining enterprises." He declares that mining operations are so unremunerating that not one man for each \$100,000,000 of bullion extracted, has grown rich by working the mines. He advises that the expense of coinage be assumed by the Treasury. Subjoined is an extract from the letter of Mr. Garnett, alluded to:

"The mines of the State of California and the adjacent Territories have, for the past 17 years produced an average of \$60,000,000 per annum, or aggregate of \$1,000,000,000 of bullion; and yet so unremunerating are mining operations as a whole, that it would be difficult to-day to find in that State one man for each \$100,000,000 who has grown rich by working the mines. Mining is to-day, as it always has been, a fascinating illusion, and a complete abrogation of all taxes and restrictions upon mining enterprises, and the repeal of all charges at the mint, would tend to develop the country and enhance its products. The present tax levied upon foreign bullion naturally drawn to this country for assaying, refining and coinage, amounting to one and three-quarters per cent. on gold and two and a half on silver, has the effect to repel the products of Mexico and British Columbia, and to force them into other channels. The coinage of money is a necessity of the Government and a benefit to the entire community, and its expense should not be borne by the few who produce the material. Other Governments have long since restricted their mints to coinage only, and if the Secretary of the Treasury will contract with private refiners for an exchange of crude for refined bullion, and throw the expense of coinage upon the Treasury, the results which will arise in the reduction of the price of gold and the subsequent advance in our national securities will much more than compensate for the loss of revenue from this source."

The suggestions of Mr. Garnett with regard to the abrogation of all mining taxes, are well worthy the attention of Congress, and are most wise and just; but his idea of making the miners of the Pacific coast dependent upon the tender mercies of a corporation for refining their gold, should never be carried out, except with ample qualifications and guarantees that they shall in future be as well and cheaply served as they now are by the Government. A corporation promise to that effect would be as idle as the wind, and as little reliable. The only way to effect such an object, would be for the Government to act as principal in the matter, and become responsible to the miner for his deposit, employing such private persons to do the refining as would do it at the cheapest rate, and in a manner most satisfactory to the parties immediately interested. The procurement of bullion from the storehouse of nature, is one of the first wants of the Government and the people—and it should be the policy of the Government to promote such a business in every reasonable manner. One of its first acts should be to remove all hindrance in the way of taxes upon bullion, and at the same time have a care that the miner should have facilities at hand for refining the product of his mine at the lowest possible rate. The expense of coinage might very properly fall upon the treasury of the nation.

**ASPHALTUM.**—Large quantities of this article are being shipped through Wilmington to this city, where it finds a ready market at a fair price.



**HOW TO PRODUCE STONELESS FRUIT.**—At a late meeting of the Agricultural Society in India, the Rev. Mr. Firminger communicated a plan by which the stones of fruit may be reduced or made to disappear, and the pulp increased in size and flavor. At any time during the cold season select a branch that is to be used afterward for inarching. Split it up carefully somewhat less than a span long. From both halves of the branch thus split scoop out cleanly all the pith; then bring the split halves together again, and keep them bandaged till they have become thoroughly united. At the usual time, the beginning of the rains, inarch the branch thus treated upon suitable stock, taking for the place of union the portion of the branch just below where the split was made. Upon a branch of the tree thus produced a similar operation is performed, and so on for successive seasons, the result being that the stone of the fruit becomes less and less after each successive operation. This process has been applied likewise to the grape vine at Malaga, and plants thereby have been produced which bear the finest fruit, without the slightest vestige of a stone within them.

The Japanese, it is said, have the art of feeding turtles and other crustacea on *aurum potable*, or some liquid preparation of gold, which gives them a most gorgeous and gilded appearance. Several of these gold turtles and crabs have been sent to the Paris Exhibition.

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*, or address DEWEY & VAUGHN, Mountain Messenger Office, Downville, Sierra County, Cal. 7v141f

#### WOODWARD'S GARDENS!

##### MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,

On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

Open Every Day!

##### ADMISSION:

To all parts of the Gardens.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.  
These Gardens are accessible by the Howard, Folsom and Market street Cars.

Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 23v13qr

#### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

#### Illuminating, Lubricating, PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

#### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat and after remaining at rest, can be started without cleaning oil.

A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

#### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 23v13-m19 414 Front street, San Francisco.

#### California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.  
Office of the Company, northeast corner of Front and Jackson streets.

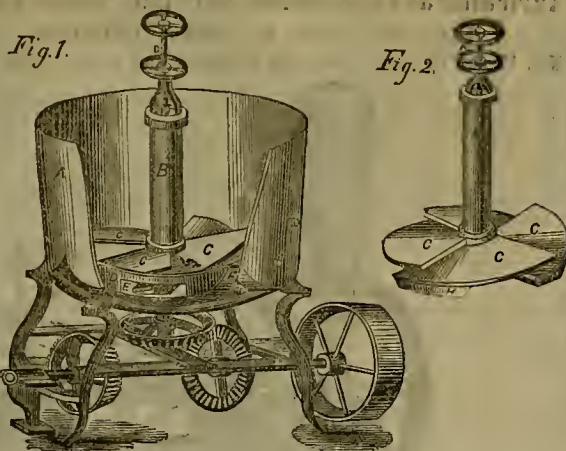
JOHN BENCHLEY,  
President.

#### Notice to Miners, Well-Borers and Water Companies.

M. PRAG is NOW PREPARED TO MANUFACTURE M. Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.  
M. PRAG,  
8v13-ly Stave Store, No. 125 Clay street, below Davis.

#### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.



For rapidity and thoroughness of work, the machine above illustrated is unequaled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr

Stair Work of all kinds.  
MADE TO ORDER  
And Shipped to all parts of the Coast.

**N. P. LANCLAND,  
STAIR BUILDER,**  
No. 49 Beal street,  
Between Market and Mission,  
SAN FRANCISCO.  
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Newel Posts and Balusters,  
CONSTANTLY  
On Hand and for Sale.

**THE CELEBRATED  
Self Generating Portable  
Gas Lamp.**

This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, and for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivaled, burning with undiminished brilliancy in a strong wind.

Directions for Use.  
Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to penetrate the gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.  
A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.  
When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton tag, one inch wide and four, or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.  
Manufactured solely by JOHN J. HUCKS, original proprietor, Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State. 18v14-3m

**HEALTH! HEALTH!**

No more Typhoid, or other Deadly Fevers

**Taylor's Stench Traps and Garbage Baskets,**

To prevent this, purchase one of  
**Taylor's Stench Traps and Garbage Baskets,**

And promote the health, comfort and cleanliness of your family. (For description see Mining and Scientific Press, April 6, 1887.) Sold wholesale and retail by TAYLOR & SONS, at No. 420 Pacific street, San Francisco. 15v141f

Contracted by inhaling the Noxious Gases of Sewers and Cesspools.

**SAN FRANCISCO BRUSH FACTORY,**  
No. 211 California st., manufactures to order all kinds of  
**BRUSHES.**  
At lower prices than cost of Eastern Importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fibers; also, Slick Brushes from the same material. The Patent Bristle, Street, Stable, Fine and Plume Brush, for which they have the exclusive right for the Pacific Coast.  
All orders from the interior promptly executed.  
FELDMAN, SIMPSON & CO.,  
Proprietors.  
16v14qr.

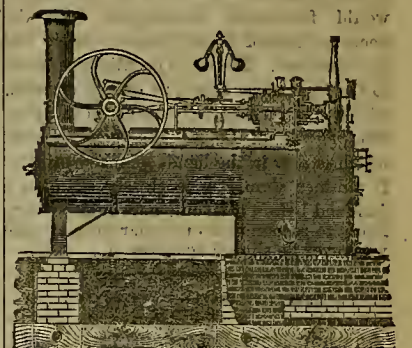
**ROWLAND, WALKER & CO.,  
GROCERS,**  
Nos. 516 and 515 Washington street,  
Are offering a complete assortment of GROCERIES at the  
LOWEST RATES. Quality guaranteed.  
Goods delivered at any point within the city limits.  
22v13-ly

#### Portable Steam Engines!

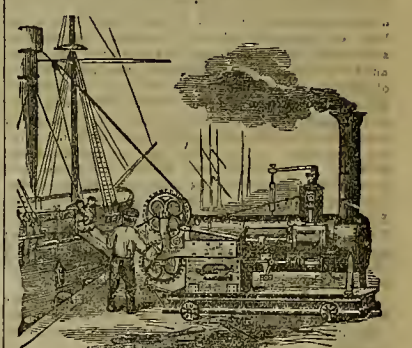
"Hoadley's" and "Hittinger's" Make,



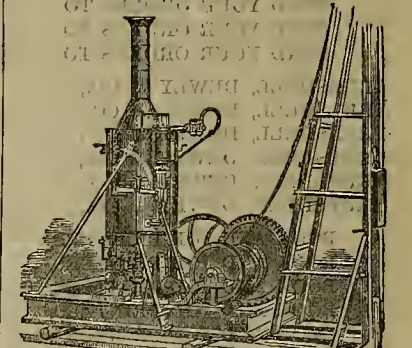
**HOADLEY'S.  
FOUR SIZES,  
8, 10, 12, and 15-Horse Power,**



**HOADLEY'S.  
3 to 40-Horse Power.**



**HITTINGER'S.  
THREE SIZES,  
5, 7, and 10-Horse Power**



**HITTINGER'S.  
TWO SIZES,  
5 and 7-Horse Power,**

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.  
These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes.  
Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the uttermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.  
All sizes on hand from 3 to 30 horse power, with and without carriages.  
Also, Portable Saw and Grist Mills.  
For sale by  
**TREADWELL & CO.,**  
9v14-6m1p Corner of Front and Market streets.



**HOW DIAMONDS ARE COLLECTED.**—The Boston Leader says: "We have received a letter from Mr. H. M. Lane, who has just visited the mines of Brazil, and tells us that in taking the gems from the earth a driver places his gang of slaves in a mud-hole where the gems are found, and pans out the earth in the water like gold-washers. The negroes are naked, to prevent them secreting the diamonds in their clothes. They are required to work facing the overseer, and are forbidden to raise a hand to the face, lest they should swallow the jewels when found. Yet they do carry them away, by becoming so expert that they can snap them with the fingers from the pan to the mouth without detection."

The diamonds of California are found, we believe, only in the "ancient drift," which overlies the present river courses. Their finding is generally accidental; no regular working for them has ever been attempted, or could be made with profit. They are usually found by miners when "washing down," preparatory to "cleaning up." Their extreme brightness and purity would naturally attract attention, and many more would doubtless be found if our miners would familiarize themselves with the peculiar form of crystallization which that gem assumes. There is a peculiar curvature to the faces never found in quartz crystals, which may be especially observed in figure 266, page 24, of *Dana's Mineralogy*, a book which is now in the hands of many miners. If a miner should once closely examine a diamond before it is cut, he would be very likely to recognize its peculiar form at once whenever he should again see it.

#### Important Notice.

#### Another New Doctor in the Field!

DR. H. A. BENTON,

Has been performing many wonderful cures in this city the past two years, and, as his practice is fast increasing at the office, he finds it difficult to attend all the outside calls, and has concluded to invite R. H. OLMSTEAD, M.D., to join him. Dr. Olmstead, of Napa City, has been eighteen years successfully treating obstinate cases with water, electricity, and the magnetic forces. Remedies of the Eclectic School, of which he is a graduate, can be resorted to when needed. Being the seventh son of a celebrated physician, and at the same time having a powerful organization, his magnetic hands like magic dispel pain and disease. He is also a natural bone-setter. Dr. Olmstead has this day associated with Dr. H. A. Benton, the Medical Electrician and Homoeopathist, at his office, 314 Bush street, San Francisco, who, having all the necessary facilities, such as the patent Electric, Chemical, Sulphur, Vapor, Hot Air and Medicated Baths, which aid in curing all curable diseases, whether acute or chronic, and with the combined skill, together with an excellent lady assistant, gives an assurance of cure to many, benefit to all, and injury to none.

N. B.—Terms for treatment within reach of all. Office hours: from 9 A. M. to 8 P. M.; Sundays, by appointment. Lodging rooms convenient for those who come from the country.

June 1st, 1867.

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O. P. Truesdell, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 505 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.

TRUEDELL, DEWEY & CO.

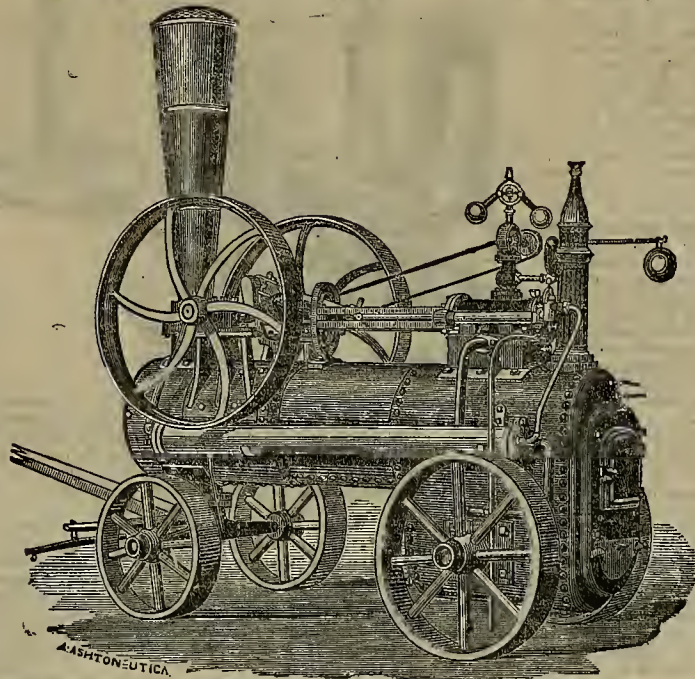
San Francisco, April 15, 1867.

## BAKER & HAMILTON,

IMPORTERS AND DEALERS IN

**Agricultural Implements, Portable Steam Engines, Hardware,  
Rubber and Leather Belting, Etc., Etc.**

Nos. 17 and 19 Front street, San Francisco, and 9, 11, 13 and 15 J street, Sacramento.



**Wood & Mann's Portable Steam Engines, 6, 8, 10, 12 and 15 horse power,**

With newly invented Water Bottom, which entirely surrounds the fire, grate and ash-pit, forming underneath the ash-pit, as up the sides of the furnace, a three or four inch water space, by which additional heating surface is obtained, the accumulation of sediment around the fire-box or furnace is entirely prevented, and renders it perfectly safe to use near any barn, or in any farm yard, or in any building where a stove would be allowed, as no sparks can possibly escape from the furnace or ash-pit. The sediment has a free passage to the bottom of the fire box, and can be blown off daily by the blow-off cock underneath the ash-pit, by which means the Boilers may be kept clean much longer than under the old system. The great saving in repairs which is effected by the use of these water bottoms, and the constantly increasing demand for them, prove their superiority to any others yet constructed.

**HOADLEY'S THRASHING ENGINES.**

**HITTINGER & RAWSON'S IMPROVED HOISTING ENGINES, 6, 8, 12 & 20-horse power.**

FOR SALE BY

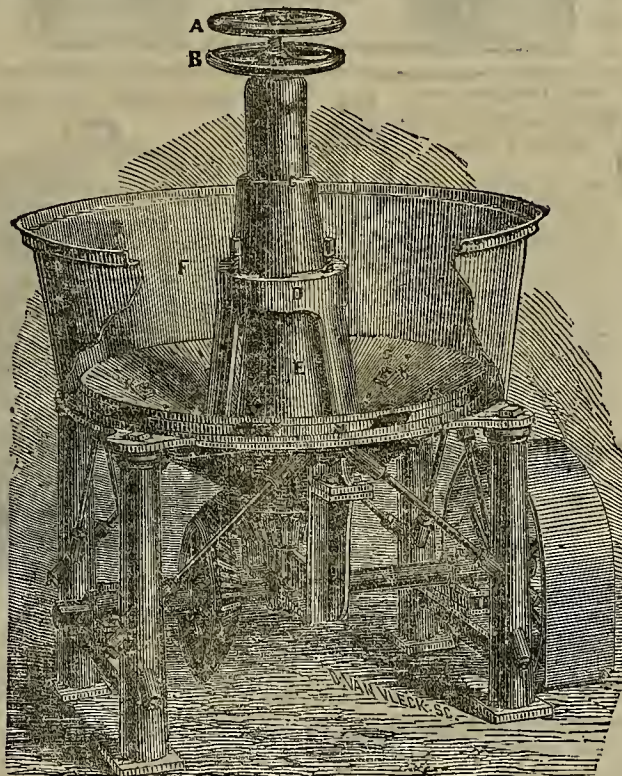
J STREET, NEAR THE LEVEE, SACRAMENTO.

**BAKER & HAMILTON,**

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## HEPBURN & PETERSON'S PANS AND SEPARATORS,

**For Reducing and Amalgamating Gold and Silver Ores.**



We invite the Mining Public to examine the record of our Machines before adopting any other for producing similar results. They have been in general use for the past three years, during which time they have been repeatedly tried in comparison with every other machine of note, and of a similar nature, and have invariably been adopted in preference; which facts we offer as the most suitable recommendation, and which is attested by the following list of

#### Principal Mills Using them:

Names of Companies.	Location of Mill.	Names of Companies.	Location of Mill.
GOULD & CURRY.....	Virginia City, Nevada.	TEARLE, ROGERS & CO.....	Nevada.
SILVER STATE REDUCT'N WKS.....	Empire City, "	MELVILLE KELSEY.....	Silver City, "
OPHIR.....	Washington City, "	HUGGIN & FORMAN.....	Silver City, "
EDWARD McLEAN.....	Silver City, "	YELLOW JACKET.....	Empire City, "
SANTIAGO.....	Zephyr Flat, "	BELOIN & HIGGORY.....	Esmeralda, "
RAPHAEL & HUSTED.....	Gold Hill, "	HECKENDORF.....	Calaveras Co., Cal.
FRENCH & BESLEY.....	Dayton, "	CARSON CREEK.....	Calaveras Co., "
HERMAN, KETSCHER & CO.....	Carson River, "	CROWN LEAD.....	Mariposa Co., "
A. SUTRO.....	Dayton, "	PIG BLUE LEAD.....	Tulare Co., "
DAVIS & BARROW.....	Carson City, "	E. T. STEEN.....	Amador Co., "
PHENIX.....	Silver City, "	EAGLE.....	Amador Co., "
CHAS. S. COUVER.....	Silver City, "	IDA MILL.....	Owens River, "
PIONEER.....	Silver City, "	ALACRAN.....	Sonora, Mexico.
L. A. BOOTH & CO.....	Virginia City, "	SANTA CLARA.....	Sonora, "
A. DELAND.....	Washoe, "	ROSARIO & GARMAN.....	Sonora, "
SUGOR MILL & MINING CO.....	Gold Hill, "	LIBERTAD.....	Sonora, "
RODGERS & GRISSAN.....	Silver City, "	DON JUAN ROBINSON.....	Sonora, "
ANDERSON & SEAL.....	Washoe, "		

Manufactured at the Principal Foundries in San Francisco.

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**HEPBURN & PETERSON,**  
At the VULCAN IRON WORKS, Nos 137 and 139 First Street, San Francisco.

**W. T. GARRATT,**  
City  
**BRASS AND BELL FOUNDER**

Cor. Mission and Fremont sts.,  
SAN FRANCISCO.

Manufacturer of Brass, Zinc, and Anti-Friction or  
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CHURCH and STEAMBOAT  
**BELLS,**

TAVERN and HAND BELLS and GONGS,

**FIRE ENGINES, FORCE AND LIFT PUMPS,**

Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles, &c.

**HYDRAULIC PIPES AND NOZZLES**  
For Mining purposes, Iron Steam Pipe furnished with fittings, &c. Coupling joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

Highest Market price paid for OLD BELLS, COPPER AND BRASS. -C- 611

### Foundry for Sale.

A One-half Interest in the

**UNION IRON WORKS,**  
SACRAMENTO,

Owned by William R. Williams, is offered for sale on the most favorable terms.

### A Good Bargain

May be bad, as the proprietor is going home to Enrope. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 85 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address  
WILLIAM R. WILLIAMS,  
Sacramento, Cal.

## Pacific Mail Steamship Co's STEAMSHIPS FOR NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.  
On the 10th, 18th and 30th of each month that has 31 days.

When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding, when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departure of 18th or 19th connect with French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates as given below:  
June 10th—CONSTITUTION.....Capt. W. F. Lapidge, Connecting with the RISING STAR, Capt. Gray.

June 18th—GOLDEN CITY.....Capt. Jas. T. Watkins, Connecting with ARIZONA, Capt. Harris.

June 29th—MONTANA.....Capt. Jos. Sutton, Connecting with OCEAN QUEEN, Capt. Maury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.  
An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines can be obtained at the office of the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports apply to Messrs. WELLS, FARGO & CO.  
The COLORADO will be dispatched July 4, at noon, and will be followed by the GREAT REPUBLIC on August 24th, from wharf, corner of First and Brannan streets, for YOKOHAMA and HONGKONG, connecting at Yokohama with the steamer COSTA RICA for SHANGHAI.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

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And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JUNE 8, 1867.

VOLUME XIV.  
Number 23.

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A Substitute for Oil in Lubricating: To Cover Iron Mining Shareholders' Direct with Brass.

## Devoe's Patent Oil-measuring and Can-filling Apparatus.

This invention, made and patented by Geo. W. Devoe, of New York, consists in a novel apparatus, designed more especially for measuring petroleum oil during the operation of filling the cans in which it is placed for transportation, whereby a number of cans may be rapidly and easily filled

on each side of the lower part of this tube are hangers, upon which the funnel, M, is suspended, the mouth of the tube opening in the interior of the funnel.

The cock, K, being closed, and F being opened, so as to admit the oil from the reservoir, B, into the measuring vessel, E, the oil as it enters E displaces the air, which rushes out through the pipe, G, and sounds the whistle, c. As the oil rises in the measuring vessel above the lower end of the pipe, G, the escape of air through the pipe

from E is replaced by air, which passes through the pipe, G. The foremost can, C, being filled, is removed, and the rear can, C', is thrust forward to take its place.

By means of this invention, the filling of cans with the exact and full quantity of oil is insured, and the process of filling is much accelerated. It has been stated that in the markets upon this coast the cans of the firm of F. W. Devoe & Co., filled by this apparatus, command at least two cents per gallon more, in price, than those otherwise filled; the lesser price of the oil of other shippers being in consequence of short measurement, which in some cases is one gallon in every case of four five-gallon cans. The immense extent of the petroleum manufacture at the East, and the universality of the use of this product, attaches much importance to this invention, as by its use the public will be more thoroughly protected from error or cheating in this universal article of consumption. Would it not be well for our California refineries to provide themselves with this device?

Further information with regard to this invention may be had on application to F. W. Devoe & Co., New York City.

## The C. P. R. R. Exploring Expedition

Among the passengers by the last steamer from the East, was the scientific corps composing the important Central Railroad Exploring Expedition, set on foot by order of Congress, and placed under the general direction of the Secretary of War. The party consists of the following gentlemen: Chief, Clarence R. King; Topographical Assistants, James Gardner, H. Cnstar, Frederick A. Clarke; Geological Assistants, James D. Hague, Arnold Hague, Samuel F. Emmons; Botanist, W. W. Bailey; Zoölogist, Robert Ridgway; Photographer, T. H. O'Sullivan. Mr. King is a graduate of the Sheffield (Yale College) Scientific School, and is well known on this coast as having formerly been connected with the California State Geological Survey.

The section to be surveyed is the belt of country along which the Central Pacific Railroad will be constructed, from Virginia City to Denver—about 900 miles; the object being to ascertain its mineral and other resources. An accurate map of the country, embracing a strip of seventy-five or one hundred miles wide, will be prepared. Careful search will be made for coal, the discovery of which along the line of that road will be worth much more to the country than gold or silver. Water will also be looked after in the desert places. The agricultural character will be pretty thoroughly studied, and the flora and fauna of the country will come in for a reasonable share of attention. Three years are to be occupied in the survey, which will doubtless be extended to fully six, or until the steam horse courses, with uninterrupted track, from the Pacific to the Atlantic.

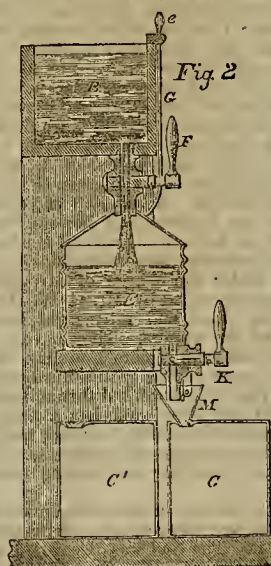
The party is composed of young and energetic men; but such as are well up in their respective departments, and their outfit is full in material and excellent in character. The military authorities on this coast are instructed to extend every needed assistance to the party and the enterprise. An escort of twenty or thirty cavalry will be detailed as a protection from hostile Indians in the desert regions to which they are going. The enterprise is one not altogether devoid of danger, and must be accompanied with the most incessant toil and exposure. There is honor to be won in the field to which they go, and usefulness to be accomplished to no ordinary extent. May the fullest success attend their efforts, and the pages of science be greatly enriched by their labors.



with an accurately-measured quantity of oil at one and the same time, thus reducing in a very great degree, the labor required in such measuring and filling operations as ordinarily performed. The invention is illustrated and described as follows in the American Artisan:

Fig. 1 is a perspective view of the apparatus, and Fig. 2 is a sectional elevation showing the reservoir and mode of filling the cans. Upon an upright frame is placed the reservoir, B, which holds the oil with which the cans, C, C', are to be filled. Situated underneath this reservoir is a longitudinal shelf, upon which any desired number of measuring vessels, E, are arranged in a row, the capacity of these measuring vessels being equal to the quantity to be contained in the cans, C. Each measuring vessel is connected with the reservoir, B, by a tubular neck, in which is placed the cock, F, by which communication between the measuring vessel and the reservoir may be opened or closed as desired. Projecting upward from the upper end of each measuring vessel, E, at or near the lower part of the tubular connecting neck, is a pipe, G, which has fixed upon its upper end a whistle, c, which is sounded by the air issuing from the pipe while the measuring vessel is being filled. Extending downward from the forward portion of the bottom of each measuring vessel, E, is a short tube, in which is placed a stop-cock, K. Situated

and the sounding of the whistle ceases, the cessation of sound indicating that the vessel is filled. The valve, F, is then closed, and



communication from B shut off, and the valve, K, then opened, permitting the flow of the oil into the can, C. The oil displaced

## A New Smelting Furnace.

Mr. Mosheimer, of this city, has shown us the drawings for a lead smelting furnace, which have been prepared by him for a New York company, of which Col. Sherman Stevens is the Superintendent. The mine on which this furnace is to be erected is situated near Owen's Lake, and is called the "A No. 1." The ore is a carbonate of lead, intermixed with spar, and assays about \$100 per ton in silver. The mine has been well opened to the depth of 200 feet, showing continually the same character of ore, several hundred tons of which are already out and awaiting the erection of the smelting works. The ore is reduced in a kind of reverberatory furnace, to which are attached two regenerating chambers, something on the plan of the regenerating chambers in a Siemen's furnace. These chambers are for the purpose of utilizing the waste heat, which is accomplished in the following manner: In the rear of the furnace are constructed two large chambers, each of which has its own connection with the outside atmosphere, with the interior of the reverberatory, and with the under portion of the fire-place of the same. When the reverberatory is put in blast, the waste heat and waste products of combustion, instead of being allowed to pass off into the atmosphere, are conducted into one of these regenerating chambers, which has first been filled with a mass of rock, tiles, or any other convenient material. The heated air from the furnace, in passing through this mass of material, imparts to it all its surplus caloric. When the contents of the first chamber have thus become well heated, the direction of the escaping air and gases from the reverberatory is changed, so as to pass through the other furnace, while the natural draft for the reverberatory is made to find its way through this heated mass. The result is that the furnace is fed with a "hot blast," heated by its own waste heat; the draft being alternated and made to enter the furnace first through one chamber and then the other, while the escaping gases are subjected to a corresponding alternation. Thus, after the first chamber is once heated, a constant hot blast is kept up, greatly economizing fuel and adding very materially to the efficiency of the furnace.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Cement Mining in Nevada County

NEVADA CITY, May 24th, 1867.

MESSEURS. EDITORS: I have just returned from a visit to such of the principal claims on the celebrated Blue Lead as lie within the boundaries of Nevada county, and presuming that any information relative to these claims, will be welcome to your readers in San Francisco, many of whom are peculiarly interested in these mines, I furnish you with the following facts: Starting at

YOU BET,

Which is one of the most prominent mining towns on the Blue Lead, and which has added as much, if not more to the gold product than any locality in California, we find four claims, three of which have for years been celebrated for their richness, and the fourth, hitherto little known, is now about to take a front rank in the rich mines of the world. I refer to the claim of M. J. Hydcliff, in which, within ten days past, cement of extraordinary richness has been discovered.

## HYDCLIFF'S CLAIM.

This claim is in all respects a model one, having been worked under the directions of Mr. Hydcliff, a practical miner of many years experience, and sole owner of the claim. It is worked through a large, dry tunnel 1,000 feet in length, eight feet high, and six feet in width. Air is supplied by what is known as a "water blast." This tunnel was started very low down in the cañon, and has sufficient pitch to drain the mine and run out the ore without any expenditure of water or steam power in hoisting or pumping. In consequence of these great advantages, Mr. Hydcliff's mine can be worked at a much less expense than any other claim in this part of the country. For the first 250 feet, the tunnel runs through bedrock, it then strikes into the cement, and 200 feet further on runs through a pay streak about 100 feet wide, in which free gold is plainly visible. Mr. Hydcliff was satisfied, however, that he had not reached the main channel of the Blue Lead, and after drifting a few feet resumed operations on the main tunnel and run about 500 feet further, when his perseverance was rewarded by finding the main channel, upon which he is now working. The lead presents a pay streak about five feet in depth, width as yet unknown, though half a dozen men are engaged in "breasting" on it. Below this strata, and to a depth varying from twelve to eighteen inches down to the bedrock, the dirt is of fabulous richness, and in spots one-tenth part is gold. "Seeing is believing," and on my return I shall exhibit to you some specimens, which I took at hazard, from this layer. The mill is of the best construction, of the Miners' Foundry, runs ten stamps, with water for the motive power, and has a "hurdy gurdy" wheel of eight feet diameter. Mr. H. claims that his mill will do more work than any other in the county of the same capacity. He has expended more than \$25,000 in opening this mine and putting up the mill, and his energy and perseverance have finally met their reward. He is now clearing over \$1,000 per week, which amount can be increased 50 per cent. as soon as a side drift now being run connects with the main tunnel. He works eighteen men; two shifts of hands of nine each, and his total expenses with this force are less than \$100 per day.

## OTHER CLAIMS.

Next adjoining, and further up the cañon, are the claims and mills of Neece & West, Brown & Co., and Mallory & Co., all noted for the immense sums of money they have paid their owners. Last season Neece & West took out \$60,000 in ninety days. They are now prospecting. Brown & Co. recently resumed work, and have found paying cement. Mallory & Co. have suspended crush-

ing, and are engaged in prospecting. The above mentioned claims are 800 feet locations.

Besides its cement interest, the neighborhood of You Bet has extensive hydraulic ground, now abandoned because the cement is so hard as to be impervious to the action of water. When labor and water are cheaper, and capital finds its way here, these immense banks will be disintegrated by blasts of nitro-glycerine and washed away; then you may expect to see a revival of the old-time prosperity of this section of country.

The wagon road from Nevada to this point, is now being extended to Dutch Flat, via Little York, and will be finished by July 1st. The distance from Nevada to Dutch Flat is sixteen miles, and on no road in California can grander scenery be viewed or such extensive mining operations. Further on we come to

RED DOG,

A town of forty or fifty houses, and the center of another formerly rich mining focus on the Blue Lead. There are four cement mills here; but not one in operation, and very little prospecting is being done. The lead has been lost in these claims, for cement mining is not unattended with the risks incidental to the search for the precious metals in all its forms. This town was totally destroyed by fire in August last, and has been rebuilt. The hydraulic claims here have paid their owners immense sums, which have been spent abroad instead of developing the resources of the country. All that has been said of the future prospects of You Bet, applies to Red Dog. A trail from this place, crossing Greenhorn Creek, brings us to

HUNT'S HILL.

Ten years since this was a populous mining town. Like most mountain towns the houses were strung out in a straggling manner on a main street. Most of them have been destroyed by fire or gone to decay, and never have been rebuilt; but since the Blue Lead discoveries in the hydraulic grounds of the Gouge Eye and Eastern claims, a number of new houses have been built, and the place has a future.

## EASTERN CO'S AND GOUGE EYE CLAIMS.

These are adjoining claims, situated just below the town, and several hundred feet above the bed of Greenhorn Creek. Both claims are drained by a tunnel built jointly, and running through the bedrock, 1,000 feet to Greenhorn Creek. They have produced largely, both before and since the discovery of the Blue Lead. Each has a first rate 8-stamp mill. The Eastern Company has been hydraulicizing and has recently resumed crushing, taking the cement from the open cut, where it is four feet thick above the bedrock. They will soon commence a drift. The Nevada Transcript of a late date, erroneously speaks of this company as working their claims through a tunnel 500 feet long. The Gouge Eye Company are working their claim by means of a tunnel, and both companies are paying more than expenses. The lead is well defined in both grounds. Further up Greenhorn Creek, we find the 10-stamp mill of the Empire Company, owned by A. A. Sargent and G. N. Jacobs of Nevada. This claim is lying idle waiting for developments in the Green Mountain claim, a short distance further up the creek.

## THE GREEN MOUNTAIN CLAIM.

This is one of the largest and most promising claims on the Blue Lead, and on its success depends the question whether two miles of ground now unworked shall be developed. This claim was located many years since and profitably worked by its locators, some Cornish miners, by means of a "pepper box," whatever that is. They knew nothing of Blue Lead, and when their rude apparatus did not yield more than \$10 per day to the hand, abandoned it for better diggings. The claim is one of 1,500 feet, and is partly owned by Messrs. Sargent & Jacobs of Nevada. About half the claim is owned in San Francisco by Messrs. Smith, Eaton, N. A. Lacour and several gentlemen connected with the Miners' Foundry. The claim is under the charge of Mr. Jacobs, and is superintended by Mr. C. W. Huson, a practical miner and millwright, who is also one of the owners. They have a first class mill from the Miners' Foundry, which is run by water power, with a hurdy-gurdy wheel. The mine is worked through a shaft, about 150 feet deep, and has a pump of great capacity, though they are not troubled with water enough to test its merits. Both hoisting and pumping are operated by water power.

From the bottom of the shaft a main drift was run and several prospecting drifts branch out from it. The lead was discovered a few feet from the workings of the old company, and although the company are working on pay dirt, they have not struck the main channel; but the prevalence of immense

boulders, while they interfere with the progress of the work indicate the proximity of the channel. The lead here is about 175 feet below the surface of the ground, and has shown great improvement within a few weeks. When the main channel is struck a drift will be run to connect with the old tunnel of the Cornishmen, which is several feet lower, and by this means the mine will be drained, thus enabling the company to dispense with their pump, and give them additional room for hoisting, and more power for the stamps. The company have expended over \$25,000 in their mine and mill, have about 1,000 feet of drifts, and their enterprise must soon be rewarded with rich returns.

## QUAKER HILL.

Two miles above the Green Mountain mine are the hydraulic claims of Quaker Hill, on Greenhorn Creek. I understood that Mr. Jacobs had a rich clean-up from his ground this week. The Blue Lead has not been developed any further in a northerly direction, and I turned off here for Nevada City. But before leaving Greenhorn Creek, let me say a few words about a new enterprise just organized by San Francisco capitalists.

## TAILINGS.

A company has been organized by Sanford and others for washing the tailings of Greenhorn Creek. The company has purchased and located the bed of the stream for a distance of ten miles from its junction with Bear river, and will soon commence operations. In the judgment of all the miners I have conversed with, this operation will prove a great success, and will inaugurate a new system of mining in California, as there are many miles of other streams as rich as Greenhorn. I have heard various estimates of the amount of gold in Greenhorn, but they all seem so fabulous that I dare not risk putting their estimates in print.

W. A. S.

THE MAILS UPON RAILROADS.—A proposition has been made that Governments should declare the principal railroads of the country to be post roads, and place upon them mail cars, to be run by Government employes, said cars to pay a toll to the railroad companies. Since the railroad managers throughout the country have so generally contrived to throw the chief profits of the roads into the hands of the holders of stock in express companies, they have endeavored to keep up their dividends by means of mail contracts. So exorbitant have they become in their charges (for in many places there is no chance for competition) that the Government has absolutely refused to take their bids; but compelled them to carry the mails at such prices as the Government sees proper to pay. Many of the railroad companies are taking this money under protest, intending to have the matter adjusted by the courts.

As a remedy against the alleged extortion, it is now proposed, as above, that the Government run its own cars, and carry the mail independent of the companies. It would not be surprising if such a result should eventually be arrived at. The idea is to construct a vehicle somewhat after the manner of the "steam passenger car," of sufficient capacity to carry its own motive power, with the mails and one or two mail agents, engineer, etc. It is estimated that such a car can be run for \$12 per each 100 miles, including repairs, wages of drivers, agents, etc. This, it is claimed, after allowing a fair compensation in the shape of toll, would make a saving of over one-third from the present cost of transporting the mails. There can be no doubt but that Government might safely undertake to do both its own mail carrying and its own and the public telegraphing, (as suggested two or three weeks since) on most of the principal mail and telegraph routes of the country, and thus save a vast amount of money to extend increased facilities to new routes, during the infancy of their existence, while they are unable to be made self sustaining. The route between Boston and Albany has been suggested as one on which to try this experiment. Eight machines will perform the service, and they can be constructed at a cost not exceeding \$10,000 each. There is no question but that the public is entitled to greater accommodations than is generally extended to it by corporations, which, after obtaining special and often exclusive privileges, too often conduct their business with a reckless disregard of that public which has created them, and nourished them into healthy activity.

## New Machine for Cement Working.

Captain J. D. Cox, of this city, has recently invented a machine for the more thorough and ready working of cement gravel, one of which has been put up at Texas Hill, near Placerville. The machine is described in the Placerville Courier as a pan, six feet in diameter, with four revolving arms, on each of which are three fingers, about three feet in length, which extend down into the pan, almost touching the bottom. The pan is made for four fingers, which will accelerate the working power by reducing the time required to separate the cement from the stones. The bottom of the pan is made of four cast iron plates, an inch and a half in thickness, with apertures for the cement to pass through when freed from stones. Those apertures are about three inches in length and an eighth of an inch wide, allowing gravel and cement one-eighth of an inch in size to pass into the sluices beneath. After a charge is worked, the pan is opened by means of a trap-door in the bottom, worked by levers, and by two revolutions of the arms, it is entirely cleared of debris. Owing to defects in the pipe, he is now using thirty inches of water, with a pressure of 300 feet, but is satisfied, by experience, that with properly arranged pipe it will require but fifteen inches of water. The Courier says that by the use of this machine a ton of cement may be separated in ten minutes, effectually removing every particle of cement and grit from the stones. Pieces of cement weighing twelve or fifteen ounces are thrown into the pan and knocked to pieces in two or three revolutions of the fingers. The revolving arms and fingers are driven through the cement at the rate of forty-five or fifty revolutions per minute. This machine is calculated to separate 100 tons of cement in twenty-four hours, at an expense of about fifteen cents per ton. Many persons have been to see it work, and all join in saying that it is just the thing needed to work the immense beds of cement, which cannot be profitably worked by the old process of crushing. The cement on which the pan has been tried was described as being very hard, but was readily freed from the worthless boulders. Mr. Cox intends putting up another pan soon. If this pan can accomplish what is claimed for it, there is no doubt but that it will prove really a useful invention, and give value to immense quantities of cement that is now worthless by reason of the great cost of working it.

A PISCATORIAL PHENOMENON.—The Neenah (Wis.) Times of April 2d, chronicles a most extraordinary piscatorial phenomenon, in substance, as follows: On the morning of the day previous the flumes of the numerous mills in the villages of Neenah and Menasha, were suddenly inundated by a most extraordinary multitude of fish, so numerous as seriously to impede the flow of water, and compel the stoppage of the mills? The fish were of all kinds which inhabit those waters, from the smallest perch up to sturgeons weighing 100 pounds. The inhabitants from all the country around flocked to the spot, caught them by hand, and carried them off in cart loads. They were discovered at early dawn, and it was not until evening that a break was made in their ranks sufficient to enable the water to be used for mill purposes! Various surmises are suggested to account for this singular phenomenon, the most feasible theory being that the ice in the lake near by, commenced to break up suddenly, and so frightened the piscatorial inhabitants thereof as to drive them in huge shoals into the outlet of the lake, upon which the mills aforesaid are located. The paper from which we condense this account, appears to give it in all seriousness, and we have no other reason to doubt its verity, except the suspicious circumstance that it is said to have occurred on the first day of April.

REGENERATION OF BONE.—Some French savans have offered a prize of \$4,000 for the best essay on the "regeneration of the bone." They declare that experience and observation seem to indicate that amputation may be almost entirely superseded by the creation of new bone.



## Mechanical.

## Substitution of Steel for Iron.

The substitution of steel for iron in ship building, and in the construction of engines and boilers, is a subject which is just now occupying much attention. The generality of engineers appear to incline to the opinion that steel can be so used with safety at about one-fourth or one-third less in size than iron; still there are many, especially among the most skillful of practical men in England, who hold that this is a subject which should not yet be considered settled, but which may still be discussed with reason and to good purpose. There are those who have had much experience in the use of both iron and steel, who either deny altogether or at least express the gravest doubts as to whether steel promises any advantage over iron for most purposes where tensile strength is required, as in sea-going ships and steamers, or in engines and boilers.

The results of experiments on the tensile strength of steel for the above uses are held by many to be so widely different from each other as to prevent their being safely relied on in practice. It appears from a statement lately placed before the Institution of Engineers and Shipbuilders of London, by the Surveyor to the Board of Trade of that city, that steel boilers, made by one of the most eminent engineers in that country, had been taken out of a mail steamer as unserviceable after only one year's run, while a large number of the managers of steamboat companies say that, from the results of their own experience, they cannot place as much reliance upon steel as upon iron shafts; but it is suggested that such experience might have been the consequence of an unfortunate selection of steel. The same objections have also been urged against the plates and frames of sea-going vessels; but it is noticed that they do not hold good in case of vessels navigating smooth or inland waters, where the inequality of strain is less than in sea-going craft. It appears to be universally conceded that in river steamers, where light draught and high speed is desirable, steel may be advantageously employed.

Steel, it is held, may possess superior tenacity; but that is not the only property required. The material should work well in the fire and between rollers—it should not buckle or twist in the hands of the workmen, especially in the form of sheets, when being placed upon a ship's frame or worked into a boiler. In thus putting steel together, it is found that much greater care is required from the workmen in fitting, counter-sinking, riveting, etc., than in working iron. Steel plates often buckle and fly under the hammer, and crack or become imperceptibly weakened in riveting up. In heavy soaway, steel plates have been known to shear off their iron rivets, which iron plates could not do; and when steel rivets have been used, the heads have been known to fly off in consequence of brittleness.

Brittle plates, and plates otherwise inferior, will sometimes find their way into iron vessels, thus reducing the entire structure—ship or boiler—to the level of the weakest plate; but this class of danger seems to be much greater when steel is used.

In steel ships, the plates are often found so badly sprung before launching as to render the position of almost every rib on a ship's side visible to the outside observer. Workmen say it is almost impossible to lay on the sheets smooth. Even if their steel plates are stronger when new than thicker iron plates, it is claimed that, if corrosion goes on at about the same rate in each, as it will do, the steel plates, by reason of their less thickness, will give out much sooner than iron. We have heard of but one reliable experiment carried to the bursting point in the hydraulic test of a steam boiler, and that was recorded in a St. Louis paper of the 4th of March last. This boiler, accord-

ing to the usual tables, should have stood a test of 480 pounds of pressure to the square inch; but it burst at only 222 pounds. The rupture occurred in two sheets near the supply pipe. The boiler stood the test only to 200 pounds without injury, and burst at less than one-half its calculated tenacity. This experiment speaks in language which should not pass unheeded. Does it not teach us that we habitually over-estimate the ultimate strength of steam boilers? Do we not betray a lack of wisdom in seeking for a theory to account for the bursting of steam boilers, when the danger lies in our miscalculation of their ultimate strength?

**TEMPERING STEEL BY MEANS OF OIL.**—In a work on the management of steel, by Mr. George Ede, the author says: "When first the oil commences to smoke, the temper would be that of a straw color, or about a temperature of 450° Fahrenheit. A darker and more abundant smoke indicates a brown temper, or 500°. A purple temper, about 530°, is shown by still more abundant and black smoke. A blue temper is reached when the oil first takes fire on the application of a flame, but ceases to burn on its removal; this shows a temperature of 580°. The usual temper for springs is shown by the oil taking fire and continuing to burn; while, if it is to burn itself away before the articles are removed, it imparts the temper which clockmakers mostly use for their work, where the steel is scarcely harder than in its natural state. When a tool is required especially hard, red-hot lead is recommended to heat it with, the tool itself being first raised to a dull red heat and hammered; of course, when withdrawn from the lead, it must be quenched as usual in cold water."

**PLUMBAGO AS A SUBSTITUTE FOR OIL IN LUBRICATION.**—The inconvenience attending the use of fatty matters generally for lubricating purposes is well known, yet oil and grease have hitherto been accepted as necessary evils. The English "Patent Plumbago Crucible Co.," have recently introduced, under the name of anti-friction powder, a material which appears to consist principally of finely ground plumbago, which overcomes all objections; it is impalpable, perfectly free from grit, and hence there is no fear of its cutting the machinery, but, on the contrary, will polish and cleanse it. As compared with oil or grease, it is claimed that the anti-friction powder has many advantages; for instance, it is impossible for it to work into ridges. Further, it will not catch the dust and hard atoms that may be flying about, as grease does, and it will wear for a great length of time. Having an affinity for metals, the powder fills up the pores, and thereby keeps them cool, and on coming into contact with a body it adheres to it, etc. It appears to be coming into quite general use among some of the heavy companies in England. It is said to be equally applicable to either slow or quick running shafts.

**IRON WIRE** is usually covered with brass by placing it first into water acidulated with muriatic acid, and holding some sheets or blocks of zinc where the iron is coated very thinly with the latter by means of a battery, after which operation it is simply placed in a solution of blue vitriol. A more durable coating is obtained by the following means: The copper solution is mixed with salts of tin in the proportion of one of blue vitriol to three quarters of salts. The wire covered with zinc, as above directed, is then left in this bath five or six minutes, and then drawn and polished, which operation imparts to it the proper appearance.

**HOW TO AVOID THE GOPHERS.**—C. M. Early and C. Sanborn, of Earlville, Delaware county, Iowa, have communicated to the American Institute at New York, what they claim to be a fact, that if seed corn be smoked along with the meat in a smoke-house, it will grow just as well, while gophers, chickens, worms, or squirrels will not touch it; they have not learned to love smoke like most of human kind. If corn may be thus protected, why not vegetables as well? If such should be the case, the fact would be invaluable to California, which is more plagued with gophers and squirrels than perhaps any other country.

## Scientific Miscellany.

## Frost Pictures.

**EDITORS PRESS:**—Every one has seen and admired the beautiful frost pictures on window panes, polished metal surfaces, etc., on a cold frosty morning. The most beautiful that ever came under my notice, were produced in one of my operations of making artificial ice. After the congelation was through, and the ice removed from the congelator, some little of the liquified gas remained in the congelator, and, on agitating it, was so suddenly vaporized as to produce such intense cold that the outside of the congelator became instantly covered with the most brilliant and beautiful frost pictures it has ever been my pleasure to behold. They were of the form of an oval leaf, and all of one form, with their edges raised and with a feathery outline, as though the surrounding vapors had been instantly congealed in minute crystals, and attracted to the cold surface like iron filings to the magnet. The whole outside surface of the machine presented a beauty more brilliant than chased silver. I called in a few persons that were near to admire this opalescent beauty, who looked with awe for a few minutes, and all were gone, perhaps never more to be reproduced. The machine is of copper, and the pictures were all of one form. Had the kind of metal anything to do with their regularity? Was it crystallization or electricity that produced this astonishing and brilliantly beautiful effect?

W. R. FRANK.

**METALLIC COMBUSTION.**—Whenever thin sheets of metals are used to connect the poles of galvanic batteries, as gold or silver leaf, tin foil, etc., and in that position subjected to a current sufficiently powerful to produce combustion, the different metals burn with a kind of hissing noise and with variously colored lights. Gold burns with a bluish white light, and leaves a dark brown oxide; silver burns with a bright sea-green color, and emits a grayish vapor; copper gives out a bluish green flame, mingled with red sparks and green smoke; zinc burns with a dazzling white light and white vapor; tin throws off red sparks, and lead burns with a purple flame. When charcoal points are used and brought into near contact, a dazzling white light is given off (the electric light); but no combustion, properly speaking, takes place. An extremely minute loss of weight only occurs, while the points become slightly increased in density. The phenomena are attended with more vivid brightness if the points are placed in vacuum, or in any of those gases which are non-supporters of combustion.

**THE American Association for the Advancement of Science** will hold its 16th annual meeting at Burlington, Vermont, commencing on Monday, August 21st. The last meeting of this association was held at Buffalo, N. Y., and continued for a week. Upwards of ninety members were present and one hundred and twelve new members were elected. The annual meetings of this association are assuming a marked importance in the aid of progressive science.

**ALBINO AMONG THE FISHES.**—Mr. J. W. Putnam recently exhibited at the Essex (Mass.) Institute, a singular specimen of the Horned Pout (*Pimolodus atrarius*, De Ray) from Lake Champlain. The fish was pure white, thus showing that albinos occur among fishes as well as among birds and animals. This, we believe, is the first recorded instance of albinism among the finny tribes.

**HEAT FROM FRICTION OF WATER.**—The Boston Journal states that recently an egg was placed in a vessel of cold water, which was made to revolve 232 times a minute. The egg was boiled in six minutes, the only heat being the friction of the water.

**HEAT CHANGES PRODUCED BY MIXING DIFFERENT LIQUIDS.**—Many liquids, on being mixed, exhibit an increase of temperature; and it is said to be a singular fact that the liquids which present the greatest increase of bulk on being mixed, are usually those which develop the most heat, at the instant of mixture—such as sulphuric acid and water, ether and chloroform, alcohol and water, etc. The only instance hitherto noticed of a diminution in bulk, is the mixture of chloroform and bisulphide of carbon; a decrease of heat also takes place at the moment of union of the two liquids. Aside from the loss of heat resulting from a change of volume, there exists a cause which absorbs heat equal and sometimes greater in amount than that given out by the combination of liquids. This cause, perhaps, may proceed from the separation of homogeneous particles necessary for the diffusion of the liquids.

**DEODORIZING VULCANIZED RUBBER.**—Vulcanized rubber may be deodorized by covering the articles made of rubber with charcoal dust, and placing them in an inclosed vessel, which is submitted to a temperature from 76° to 94° Fahrenheit during several hours. The articles, on being removed and cleaned, are found to be free from odor, and not the least changed in form, even in its most minute details.

**EXTRACTION OF POTASH AND SODA FROM FELDSPARS.**—M. Daubrée placed feldspar and distilled water together in a cylindrical vessel to which was given a rapid rotation on its axis. By this movement the feldspar was found to undergo decomposition and the water to become alkaline. Considerable quantities of potash and soda were separated—the amount varying with the quantity of rock operated upon.

**IODIDE OF SILVER PHENOMENON.**—Fizeau, in his researches on the dilation of minute crystals, found the chlorides, bromides, and iodides following the same law of expansion by heat with the exception of iodide of silver. The crystals of the latter salt actually contract instead of dilating by the application of heat.

**TO DETECT SULPHUR.**—Dr. Vohl points out a means of detecting sulphur or its compounds in petroleum after refinement. The oil is to be digested for some hours at a gentle heat, with a small piece of potassium. Water being added, the aqueous solution is to be tested with nitro prusside of sodium. If the result is a deep purple solution, it indicates the presence of sulphur.

**SINGULAR FACT.**—It is said that a strong blast of air discharged from a pipe within a short distance of a flat surface, will not repel, but will attract any object placed in the intervening space. It has been suggested that safety valves are sometimes attracted to their seats in the same way, when a thin annular discharge of steam is going on under their edges.

**TO REMOVE SILVER STAINS.**—It is said that a concentrated solution of perchloride of iron will remove silver stains on the hands or clothes. If gallic or hypogallic acid has been used, it will be necessary to wash the spots afterwards with a few drops of a strong solution of oxalic acid.

**OBJECTIONABLE.**—Hydrofluoric acid has been used in oil as a bleaching agent. This is very objectionable; as, if the oil is used in lubricating, the acid injures the metal. In lamps it produces a highly irritating vapor, causing inflammation of the eyes, destroying color, and injuring glass.

**PHOSPHORUS BEARS,** for twenty or thirty seconds, without ignition, the action of radiant heat at a focus where, in the fraction of a second, platinum is raised to a white heat.

**TO MIX OIL WITH WATER.**—Dissolve about one ounce of potash in a pint of water; then add about half a gill of olive oil, and stir briskly, when they will combine and become whitish and opaque. These proportions will answer for any other quantity. Many lubricating oils are made upon this principle.

**A NEW THALLIUM MINERAL.**—A selenide of copper, silver and thallium has been found in Norway and analyzed by M. Nordenskiöld. It contains 17 per cent. of thallium.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

64,458.—IMPROVED AMALGAMATOR.—Walter L. Strong, San Francisco, Cal., assignor to himself, G. W. Strong and J. F. Taylor.

What I claim is, 1st, the shoes, e c and g g, in combination with the attaching joints, d and h, and the arms, D and G, substantially as and for the purpose described.

2d, The geared wheels, L m m, and the rim, n, in combination with the shaft, F, and muller, G g, as described.

3d, The wrench, D, with the shaft, P, operating upon the wheels, m m, rim, n, and shaft, F, substantially as and for the purpose described.

The nature of this invention is to provide an amalgamator of such a construction as to give the greatest effect to the grinding surfaces. This is attained by providing a pan of the ordinary construction and material, with a central hub, around which revolve two hollow shafts, carrying two sets of mullers, one above the other, which turn in opposite directions. We have already fully described this machine in previous numbers of the Press as one in which two sets of mullers are employed, revolving in opposite directions.

64,258.—AMALGAMATOR.—A. J. Senatz and G. W. Knowlton, Sacramento, Cal.:

We claim the copper hottomed pans with the iron rods or bars and slots in the end fastened to the sides of the pans with pins, and by means of which rods or bars the pans are fastened together and an undulating motion is secured for the water and earth, which are dashed upwards against the stationary riffles whereby the earth or sand is prevented from becoming solid.

We also claim, as a part of the same machine, the turned-up ends of these pans and the stationary riffle-beds connected with the pans, all of said parts being the machine in combination which produces the intended effect.

64,265.—WASHING MACHINE.—Adelia Waldron, San José, Cal., assignor to herself and J. H. Atkinson, San Francisco, Cal.:

I claim the double washboards, O and K, the eccentric buttons, B, the sash-frame, N, with clamp, C, the lever-handle, G, the spring, J, in combination and exactly as set forth and for the purpose specified.

64,297.—RAILROAD RAIL.—B. M. Esterle, San Francisco, Cal.:

I claim the railroad rail provided with alternate inclines, A and B, substantially as and for the purposes herein set forth.

## RECENT INVENTIONS.

IMPROVEMENT IN FURNACES.—The Gold Hill (Nevada) *Trespass*, says that Messrs. Thompson & Hutchinson have devised an improvement in furnaces for steam boilers, which is likely to be of considerable importance in economizing fuel. By the use of it a better and more perfect consumption of fuel—wood or coal—is effected. The improvement has been introduced at DeLand's mill, in Six-Mile Cañon. Under the old régime, but eight stamps were driven, with two pans. With this improvement, the entire force of the mill is worked—sixteen stamps, twenty-four Knox pans, four Wakely, two Hepburn. The improvement is adaptable to any furnace; the cost is slight; and the saving in wood, in producing a given amount of heat, is estimated at one cord in every seven. The inventors ask persons interested to witness the working of their invention at DeLand's mill.

NEW AMALGAMATOR.—The Columbia (Oregon) *Citizen* describes an amalgamator, recently invented by Messrs. Foreman & Mattison, as follows: It consists of an upright cylinder, into which is inserted a pipe extending to within 1½ inches of the bottom. The pulp, as it comes from the battery, is conducted into this pipe through a hopper. A jet of steam is directed into the pipe in the bottom of the hopper, which forces the quartz through the same into the quicksilver in the bottom of the cylinder. The action of the steam heats the quicksilver, and brings the gold into contact with it, whereby it is saved. The cost of the arrangement does not exceed \$40. We are not advised whether it has yet received a practical trial. Mr. David Stage, of Columbia, has the patent right for California and Nevada, and will dispose of the same to such as desire to avail themselves of its benefit.

TO TRACE A SHIP'S COURSE.—M. Carrodi, of France, has devised an apparatus for making a ship trace its own course. By means of wheel-work inside the binnacle, a long strip of photographic paper is unrolled horizontally with a given velocity. The card of the compass is pierced at the point usually marked "North Pole." In the hole is placed a small object glass, through which light passes, and on striking the moving photographic paper the actinic impression is made in the form of a line, which varies in direction precisely with that of the vessel, thus furnishing a daily diagram of the ship's course.

IMPROVEMENT IN WEAVING.—The sewing machine is likely to have a rival in an invention recently perfected by which wearing apparel of all kinds, shirts, pantaloons, vests, skirts, ladies' mantles, jackets, coats, etc., etc., are both woven and sewed at the same time. The sewing of the seams is stronger even than hand sewing and perfectly smooth and even, and the articles are woven and sewed of any pattern, of wool, silk, cotton, or any other material.

A TOR has been invented in Paris called the prolific top; it is set spinning by means of a thread and needle. As soon as it is fairly in motion a half dozen small tops come out of it—how? that is the inventor's secret—and begins to spin around it like the satellites around Jupiter, and after some time reabsorbs them.

NOVEL VEHICLES.—A new riding vehicle has made its appearance in Paris, which is mounted on very large wheels. The horse is placed between the wheels, whilst the driver and the carriage body are over the horse. Such a vehicle as this takes up but little room, and is very convenient in crowded thoroughfares.

Appropos to the above, a car has appeared in New Orleans, which is described as a very neat jaunting car or carriage on two wheels, drawn by one horse. The driver sits on a seat in front, as in a sulky, and two cushioned seats range lengthwise, affording ample and comfortable accommodation for at least eight passengers, who, four on one side and four on the other, sit back to back, their feet resting on a foot-board just clear of the low wheels to which is attached a splash board, protecting them completely from any mud sprinkling as they merrily dash along.

ELECTRIC RIFLE.—An electric rifle has been invented by a Frenchman, with a battery inclosed in the stock, the wires from which emerge near the breech and are connected with a very fine platinum wire, within the charge, which is thus rendered incandescent.

"THE ORGANIC VIBRATOR," is the name given by an Englishman to a small instrument which fits in the ear, is not perceptible, and by which the unpleasant sensation of ringing noises in the head is entirely removed. It is said to afford immediate relief to deaf persons, and enables them to hear distinctly at church and in public assemblies.

A LUNCH BOX.—Some Yankee has invented a "lunch box," which can be folded up without detriment to the pie and cake contained therein. A company is being organized to manufacture the boxes, at the rate of 10,000 a year, in Connecticut.

HOW TO SIT.—All consumptive people, and all afflicted with spinal deformities, sit habitually crooked, in one or more curves of the body. There was a time in all these when the body had its natural erectness, when there was the first departure on the road to death. The make of our chairs, especially that great barbarism, the unyielding and disease engendering rocking chair, favors these diseases, and undoubtedly, in some instances, leads to bodily habits which originate the ailments just named, and to say nothing of piles, fistula, and the like. The painful or sore feeling which many are troubled with incessantly for years, at the extremity of the back bone, is the result of sitting in such a position that it rests upon the seat of a chair, at a point several inches forward of the chair back. A physiological chair, one which shall promote the health and preserve the human form erect and manly as our Maker made it, should have the back straight, at right angles with the seat, the seat itself not being over eight inches deep. A chair of this kind will do more towards correcting the lounging habits of youth than multitudes of parental lectures, for then if they are seated at all they must sit erect, otherwise there is no seat hold.—*Hall's Journal of Health.*

CONTRIBUTIONS FOR OUR CABINET.—We have upon our table quite a number of valuable "contributions for our cabinet," all of which we shall endeavor to notice next week.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING,  
June 8, 1887.

## CITY STOCKS.

For months past City Shares have not been neglected to such an extent as during the last fortnight. Mining shares seem to have monopolized the entire range of stock transactions, and under the present easy condition of the money market, we may expect a continuation of this disposition on the part of those who have idle capital. Sales of National Ins. Co. have been made at \$71@71.25 per share.

## MINING SHARE MARKET.

The Mining Share Market has shown unusual activity during the past week; however, with the exception of a few prominent stocks, the decline from our last quotations has been very marked. In the absence of any very decided movement on the part of speculators to "bull" or "bear," the recent appreciation of mining shares has been remarkably well maintained, and it may be remarked that the rise has, in most instances, been based upon favorable developments. This is especially true of those stocks which have not declined within the period under review. The yield from the various claims on the Comstock lode continues large, and, coupled with the constant decrease of expenses, both in the manipulation of ores and general management, will greatly inure to the benefit of the stockholders in the future.

SAVAGE—ruled at very uniform rates during the week under review, opening at \$3,900@3,890, receded to \$3,850, improving to \$4,000, and closing yesterday at \$3,975. The approximate value of the 2,101 tons of ore extracted from the mine during the week ending June 1st was \$84,753, or \$40.34 per ton; the yield of the previous week showed an average value of \$45.85. The north mine, on the seventh station level, yielded nearly one-half of the above amount, and the balance, with the exception of a small amount from the upper portions of the mine, was taken from the middle and southern developments on the same level. The "breasts" at the northwest end of the seventh level are said to be in very good ore, producing a fair amount of first-class quality. In the winze, in the south mine, 160 feet from the line, better ore is now obtained than has been found in the incline at a depth of 105 feet. It is thought that it will require from three to four weeks to make the connection with the middle mine on the eighth level. The shaft, on the first instant, had attained a depth of 20 feet below the fourth or ninth station level. This company disburses a dividend of \$200 per foot to-day, carrying over, after payment of dividend, a cash surplus of about \$100,000.

HALE & NORCROSS—quoted at \$2,800 bid and \$3,600 asked; no sales. During the month of May the mills employed by this company reduced 3,377 tons of its ore, the 65 per cent. assay value of which, at an average yield of about \$43.70 per ton, shows a bullion return of \$147,598.70. The actual returns from the mills show a yield of \$150,826.68, being an average of \$44.66 per ton. The estimated profits of the month, it is thought, will amount to about \$75,000, or a surplus of \$20,000 over the usual monthly dividend of \$125 per foot, which will be declared on the 10th instant.

YELLOW JACKET—has met with considerable sales at enhanced rates, advancing from \$1,750 to \$1,900, seller 30, receding to \$1,800, and closing at \$1,773. A dividend of \$75 per share will be paid on the 10th instant. The bullion yield of this company amounted to \$273,684.63 in May; receipts from other sources, \$10,711.86. On the 31st of May there was a balance to the credit of the company, over all liabilities, of \$152,590.15. The ore extracted during the month of May aggregated 6,940½ tons; amount reduced in same time, 7,546 tons, showing an average yield of \$37.06 per ton.

CROWN POINT—fluctuated considerably, opening at \$1,600, advancing to \$1,800, declining to \$1,660, and at the close sold at \$1,630. During the week ending May 31st 656 tons of ore were raised from the mine. The east body of ore on the 500-foot level has been opened 50 feet north and south, and a slope of 10 feet has been made. The

Rhode Island mill reduced 162 tons of ore from the east vein on the 500-foot level, which, it is said, yielded \$48 to the ton. It is expected that the shaft will reach the 600-foot station by the first of July. The May returns of bullion amounted to about \$82,000. The election for Trustees, on the 4th instant, placed the following new Board in power: Thomas Sunderland, A. Hayward, W. B. Johnson, Charles Bonner and Thomas Bell. Mr. Sunderland was elected President, and Chas. E. Elliot, Secretary, in place of J. H. Jones, resigned.

GOULD & CURRY—has been in slight request during the past week, selling at \$570 @560, then at \$545, and at the close obtaining \$540. The mill of this company has been stopped to allow an accumulation of ore large enough to insure a continuous run of two or three months. It is thought that in the course of four weeks the mill will be again in operation.

CHOLLAR-POTOSI—declined from \$570 to \$540 per share, rose to \$558, receded to \$530, and then to \$470, and closed yesterday at \$495. The Blue Wing level is reported to continue to look well in the south end. We have nothing new relative to the old Santa Fe level. On the third level, 133 feet below the old Santa Fe station, and 365 feet from the surface, a seam of ore three feet wide has been found on the east side of the Chollar timbers, which is said to assay about \$73 to the ton. Some parties are of the opinion that this portion of the mine will produce a large amount of ore. The gross receipts of this company during the month of May amounted to \$334,289.17, leaving a net profit of about \$100,000. It is stated that the monthly dividend will be \$25 per share.

KENTUCK—improved from \$415 to \$490, declined to \$445, and closed yesterday at \$430. This company obtained \$132,333.88 in bullion from 2,390 tons of second class ore worked during the month of May, being a yield of \$59.55 to the ton. During the same period 2,539½ tons of ore were extracted from the mine. A dividend of \$30 per share (\$60,000) will be paid on the 10th inst., after paying which they carry over a cash surplus of \$44,484.

OPHIR—has been largely dealt in at declining rates, receding from \$325 to \$275, and closing at \$235.

BELCHER—declined from \$400 to \$370, and at the close realized \$310. An assessment of \$15 per share was levied on this stock on the 30th of May.

IMPERIAL—has been steadily maintained at about \$200, but at the close declined to \$193@190. The bullion receipts of this company during the month of May aggregated \$94,000.

GOLD HILL Q. M. & M. Co.—sold at \$162.50. The yield of bullion in May amounted to \$10,866.62. . . . EMPIRE realized \$172.50@168, and closed at \$165, buyer 80.

OVERMAN—has been exceedingly active during the past week at greatly enhanced prices, rapidly advancing from \$65, buyer 30, to \$107, under large sales, and closing at \$135. This company under the management of its new superintendent, Mr. McCullough, is looked upon very favorably by stock dealers. It is reported that from 5,000 to 8,000 tons of ore are at present in sight in the mine, which it is thought will yield a handsome profit over mill expenses.

CONFIDENCE—receded from \$70 to \$54, and closed yesterday at \$52. Return of bullion show a yield of about \$17,000 in May. . . . BULLION improved from \$28 to \$50, seller 30, assessment of \$10 delinquent, receded to \$40, and closed yesterday at \$45. . . . SIERRA NEVADA rose from \$7.50 to \$12, and at the close sold at \$10. An assessment of \$10 per share was levied on this stock on the 1st inst. . . . EXCHEQUER sold at \$8.

DANEY—advanced from \$24 to \$30, receded to \$28, and closed at \$26. On the 3d inst., this company took up 60 pounds of amalgam, being the product of 350 tons of ore, which, it is thought, will produce over \$7,000 in bullion.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,721,841.

PAINE & STEVENS' CONCENTRATOR.—In our notice of this machine last week, we were under the impression that the main body of the machine was new. Our attention has since been attracted to the illustrated description of a similar machine in the supplement to Uro's Dictionary, which Messrs. Paine & Stevens have materially improved, and by which improvement, it is claimed, the machine is made much more efficient and serviceable. It is for these improvements that they have applied for letters patent.







## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Bulletin*, May 25th: The Illinois California Co. have cut a ledge in their tunnel, the ore from which, by a working test, yielded \$60 per ton. When the lode was first tapped, a large body of water burst forth, which still continues, although somewhat diminished in quantity. The lode at the point crossed is pinched, the pay streak being only about one foot thick.

As soon as an ore house can be constructed, the Tarshish will put the Washington mill at work on their ores.

## Amador County.

From the *Ledger*, May 25th: Work has been resumed on the Kennedy mine. It is ranked amongst one of the richest veins in the State. The last crushing yielded \$54 per ton; free gold.

## Calaveras County.

From the *Chronicle*, June 1st: A surveying party of the Mokelumne and Campo Seco Canal and Mining Co. report that they were astonished to find such an extent of rich placer diggings as extend from Chili Camp—running south and west through Camanche—and Cat Camp, down to the plains in San Joaquin county. This belt is some 12 or 15 miles long, by a breadth of 8 or 9, and in every gulch and ravine, on every hilltop and hillside, wherever a prospect has been made, gold is found in paying quantities, and often exceedingly rich. Many of the prospectors find good claims by simply pulling up the grass and flowers on the hills and washing the adhering earth, often getting large prospects on the very surface.

Stockton *Independent*, June 1st: J. Pache & Co. are forwarding machinery for a 40-stamp mill to the Plymouth Rock Co., at their mine in Rich Gulch, near Brushville. Altogether there will be 70 or 80 tons of freight.

From *Copperopolis Courier*, June 1st: The rich strike at Carson Hill, in the Finnegon mine, proves to be more than a pocket. It opens as a regular vein, almost fabulously rich, and has been shown to contain from \$80,000 to \$100,000.

## Colusa County.

From the *Colusa Sun*, June 1st: The shareholders of the Lyon claim, at a late meeting, determined upon purchasing a Haskell furnace. There is no doubt but that the ore is good, and in sufficient quantities to warrant the outlay.

## El Dorado County.

From the *Courier*, June 1st: W. H. Cox, owner of the cement mine, on Texas Hill, has erected a patent cement pan, just invented by J. D. Cox, of San Francisco, which works admirably. He intends to hydraulic off the top gravel, above the cement; the top gravel more than pays for water and wages. One tunnel is in 1,700 ft. There are two cement channels—one about 25 ft. from the mouth of the tunnel. This bed of cement is 250 ft. wide, and from four to eight ft. thick, carrying gold from top to bottom. Competent judges say that the cement now being taken out will run \$5 per ton.

The shaft on the Pacific mine is down 313 ft. At a depth of 298 ft. the ledge was struck, and after going through 15 ft. the west wall has not been reached. The rock is full of gold, visible to the naked eye.

The Independence mine at Brownsville, is proving very rich; the owners are building a large mill. On the Eagle claim there is a 10-stamp mill; the claim pays \$18 per ton. The Stillwagon yields \$16 per week.

The owners of the Miller ledge after running 180 ft., struck the ledge at a depth of 80 ft. The ledge is 18 ft. wide, and gold in large quantities can be seen with the naked eye.

## Fresno County.

From the *Stockton Independent*, June 1st: Machinery for a quartz mill at Coarse Gold Gulch, Fresno county, is being carried forward from this city by Geo. S. Ladd & Bro.

## Kern County.

From the *Courier*, May 25th: A rich strike has been made in the Bright Star lode, Pite Dist. The ledge was struck within three ft. of the surface, and is three ft. wide.

A specimen taken from the Belmont mine, Washington Dist., weighing 600 lbs., will yield about \$1,000 per ton. The owners are about going to work with a new set of arastras.

## Mariposa County.

From the *Stockton Independent*, June 1st: A large quantity of machinery has arrived from San Francisco, to be forwarded to Hunter's Valley, Mariposa county, where a new quartz mill is to be built. It is to be all delivered by the middle of June.

## Nevada County.

From the *Transcript*, May 30th: Stidger, Clay & Evans, Birchville Dist., at their last clean-up, took out \$19,700. The lead has increased to 300 ft. in width. A day or two since they cleaned up five boxes and took out \$5,000. It is thought the next yield will amount to \$25,000.

The San Joaquin Co., after their last run, declared a dividend of \$300 per share. The Golden Gate Co., North San Juan, after the last run, cleaned up about \$5,000.

May 31st: Edward Brimskill, on the ground adjoining Rocky Bar, Washington, after running 600 ft., struck pay dirt. After one week's run he took out \$588. From one pocket he took out 13 ozs.

Between 400 or 500 ft. of the flume on Hawke & Co's claims, on Deer creek, was lately blown down by high winds.

June 1st: Five ozs. of rock from the Green Emerald ledge, at Cisco, yielded \$1 in gold. The mill upon the Jim ledge has started up again.

The Birchville Co., at Eureka, have a ledge in their mine  $2\frac{1}{2}$  ft. wide, and the rock is filled with rich galena sulphurets.

June 4th: Last week the L. X. L. Co., at Woolsey's Flat, after a seven week's run, cleaned up \$10,400. The expense of working the claim during the run was \$4,500.

*Gazette*, May 31st: The Black & Young mill is running steadily. The ledge looks better than at any former period.

June 3d: A rich deposit of cement gravel has been opened at Chapparral Hill. The gravel is cemented so compactly that it can not be worked, except in a mill. Some parties have made arrangements to erect a mill.

Goodspeed & Co. cleaned up, on Saturday last, from a six days' run on 300 tons of cement, \$1,500. Eastern, Preble & Co., on the same day, cleaned up \$1,200. The Green Mountain Co. are running their mill night and day.

June 4th: The claim of Wm. Weighel, at Columbia Hill, employs 23 men, using 1,000 inches of water per day. The tailings below his diggings have accumulated to a depth of 150 ft.

The Kentucky Co. are down 110 ft. The shaft is 15 ft. in length and 5 ft. in width. Water has accumulated in the shaft, rendering it impossible to sink further without the aid of steam. Powerful machinery has been procured in San Francisco. They expect to reach the bedrock at a depth of 250 ft. Another company at Moore's Flat have located claims on the same range.

June 5th: Booth & Co., at Eureka, have been crushing quartz with a couple of stone arastras. The rock is broken with a sledge, and the arastras are fed  $\frac{1}{4}$  of a ton once in 12 hours. The rock crushed has been from the Liberty mine, which yields \$20 per ton. The arastras are not excelled as amalgamators, and are about as economical as ordinary mills.

*National*, May 3d: New and rich quartz discoveries are being made in this region constantly.

June 3d: The Red Jacket Co. have been running a tunnel into a hill on the north side of Deer creek for about a year. About a week since the stockholders held a meeting at the claims, and, after examining the ground, concluded that they had the genuine blue cement lead, a continuation of the Smartsville lead.

Grass Valley *Union*, June 1st: For the first two weeks of the last month the Eureka yielded \$30,000, and for the next two weeks \$31,000, showing a total yield of \$61,000 for four weeks of the month of May. A portion of the ore crushed was reduced at the Sebastopol mill, Boston Ravine, the company's mill at the mine crushing the greater part of the rock. Regular dividends are made every four weeks. The dividend for the last month will reach the handsome figure of \$30,000.

June 4th: The Osborne Hill quartz mill was destroyed by fire on the 3d inst. Besides the mill, 300 cords of wood belonging to the Co. was destroyed, and the hoisting works belonging to W. H. Mitchell & Co. The original cost of the mill was \$25,000. The loss of the company is estimated at \$20,000—no insurance.

*Excelsior*.—From the *Sun*, June 1st: A tunnel has been driven in the Mohawk and Montreal mine 67 ft., but has not yet reached the ledge. Their mill contains five stamps, weighing 625 lbs. each. Five additional stamps will be added shortly.

The California Co. have run a drift in 24 ft. Fine specimens of native copper have been taken out during the last week. Specimens taken out 20 ft. from the mouth of the drift presents the appearance of fern leaves, and can be found in every seam of the rock. It is rich in gold. Their shaft is down 100 ft. The cost of running their shaft and tunnel has been \$20,000.

From  $1\frac{1}{2}$  lbs. of rock from the Green

Emigrant claim, upwards of 60 cts. in gold was lately obtained.

Rock recently taken from the Eagle Co's claims will prospect \$2,500 per ton.

*Transcript*, May 30th: The Grant mine is yielding handsomely. Since last December, their mill has turned out \$18,000. The last yield, after two weeks crushing, was \$2,000.

*Gazette*, June 1st: The Green Emigrant Co. are taking out some splendid ore, which is mostly decomposed. The ledge is about 6 ft. wide.

The Wheeler Co's claim is the second west extension of the Shooting Star ledge, and is one of the finest veins in the district.

## Placer County.

From the *Herald*, June 1st: The Old Rip claim has recently been purchased by Wm. Rouse, of Greenwood. He is preparing to work the mine in a thorough manner. There has been many thousands taken out of the Old Rip, yet it looks hardly touched.

The Rough Gold claim, owned by Davis & Co. has been worked steadily, and is becoming rich.

The old Dewey claim, owned by Breese, Wheeler & Co. is considered the best cement claim in the county. The company could any day take \$100,000 for it. They have a tunnel in a distance of 1,400 ft. There is enough pay cement in sight to keep the mill running three or four years. The owners have monthly dividends which are very handsome, sufficient to make one wish he had an interest in "Old Dewey."

The Green Emigrant ledge has been sold to parties in San Francisco for \$60,000.

## Plumas County.

From the *Union*, May 31st: The Chinamen at Susanville, are extracting buttons of silver from the rock near that place. By their rude assay, the rock yields \$800 per ton.

## Shasta County.

From the *Courier*, June 1st: Several miners recently sunk a shaft in a large flat gulch near Piety Hill. At a depth of 20 ft. they struck a layer of blue gravel, three ft. thick, which prospects exceedingly rich.

## Sierra County.

From the *Messenger*, June 1st: Snow at Gold Lake is 20 ft. deep; miners are unable to work their claims. Fessler, Lewis & Co. have located a ledge on Kanaka creek, which is composed of talcose slate. It is six or eight ft. wide. Bishop, of Alleghany, a few days since, found a small boulder of quartz and gold in his garden, for which he was offered \$400. The ground was immediately staked off in claims. Mr. Allen, while grading a lot for Wm. T. Luther, on Jersey Flat, picked up a piece of quartz rock containing nine ozs. of gold.

## Trinity County.

From the *Journal*, May 25th: About Minersville, claims are paying much better than usual. Several new mining projects are under way. Taylor & Frey are pushing work on their new ditch from Grass Valley Creek. The ditch and flume from North Fork to Honest Bar will be completed soon. Better work is being done in the Weaver-ville Cañon and Judiana Creek, than for years.

## Tulare County.

From the *Visalia Delta*, May 29th: Mr. Brooks, of San Francisco, has leased the White River Mining Co's mill and mines. He will commence operations immediately.

## Yuba County.

From the *Marysville Appeal*, June 4th: The Jefferson claim is undoubtedly one of the best in Brown's Valley. From the Don-nobroge claim over \$200,000 gold has been taken by different owners. Work on it has been discontinued. The Paragon Co., after having spent \$10,000 for machinery and \$1,000 in mining, have abandoned their claim in proud disgust. Work has also been discontinued on the Dan Webster—cause, want of management.

## ARIZONA.

From the *Arizona Miner*, May 18th: The Great Central copper mine, at 100 ft., is a well defined lode. A large amount of ore has been taken out. They are working 25 men.

The Plauet mine is yielding 100 tons per month. The vein has been prospected 200 ft. They work 12 hands.

The Challenge mine has been worked two years, and turned out 500 tons of mineral.

About 35 men are working the old Walker placers on Lynx creek, and taking out \$8 each per day. From the Black Cañon placers we have good reports. A number of parties are at work on the upper Hassayampa, and making it pay very well.

May 18th: The Vulture mill at Wickenburg is in active operation, crushing with 10 stamps about 13 tons a day; 2,000 tons are now ready for the mill. The ore returns an average of \$50 per ton.

About 35 men are working the old Walker placers on Lynx Creek, taking out eight dollars each per day. From the Black Cañon placers we have good reports. A number of parties are at work on the upper Hassayampa, and making it pay very well. The water is everywhere abundant, and will, it is thought, be sufficient for mining purposes during much of the summer.

## COLORADO.

From the *Rocky Mountain News* of May 15th: The Gregory lode shows by test nine to twelve per cent. copper, besides from \$100 to \$250 gold per ton. The Comet lode shows 25 per cent. of copper, gold, \$75 to \$100 per ton. One vein of the Nonpareil Prospecting and Mining Co. assays as high as 65 per cent. copper, besides gold and silver. The Lyon smelting works at Black Hawk, lately produced matt, assaying from \$800 to \$3,000 gold per ton, and from 60 to 75 per cent. copper. Among the lodes found to be rich at Georgetown, are the Anglo Saxon, Bethany, Tom Corwin, Henry Clay, Mexican, Monarch, Terrille and Henry Ward Beecher. Dr. Johnson, from eight ozs. of ore, produced a silver button weighing four ozs.  $2\frac{1}{2}$  pennyweights. Mr. Harris is superintending the erection of a new furnace on a new plan, after the fashion of glass furnaces.

From 1,300 lbs. of ore from the Bethany lode, Georgetown, a silver brick weighing 199.67 ozs. was taken.

May 18th: R. H. Evans who is engaged in hydraulic mining at McClellan Gulch, is exhibiting a specimen of placer gold, and some nuggets of pure gold; he averages \$30 per day to the hand. One nugget weighing 33 ozs. has been lately found.

*Valley News*, May 14th: Messrs. Sherman & Sons, while prospecting for coal about one mile north of town, have struck oil. The indications are such that they feel confident if a good well was sunk and with the proper machinery, that the supply of oil from that place would prove inexhaustible. A gentleman who is well versed in petroleum matters, offers to wager \$2,000 that he can supply Colorado in oil from that spot alone.

*Times*, May 14th: The following transfer of mining property has been recently made. Deed from James Eastman and wife to Andrew McKinney and Willard D. Wheeler, Boston, sundry claims in Gilpin and Clear Creek counties, for \$6,000. Deed from Augustus Z. Huggins and wife, to the Pavonia G. M. Co., of New York, sundry mining claims, consideration \$7,000.

## IDAHO.

From the *Owyhee Avalanche*, May 25th: Rich quartz has been discovered at the head of Purdy Gulch, on the east slope of War Eagle. Pure silver has been taken out of a small seam of the Noonday, near the Oro Fino. The seam is very narrow. A ton of ore has been extracted.

The Lincoln Mill has been rented by Messrs. Ford & Gafford, of the Owyhee Co. and will commence running as soon as necessary repairs can be made.

Burnham & Jackson have finished their contract on the Hays & Ray. Their tunnel—over 400 feet long—taps the Poorman 250 feet below the surface.

The Enterprise arastra, below Ruby, is undergoing repairs, and will commence work soon.

The Silver Cord men are putting a whim over the shaft, which is down over 100 feet. There is much good ore on the dump.

*Idaho World*, May 18: At Pioneer City, water is running in all the ditches except one—the Mountain ditch. Wilson & Waterman have reduced the price of water to 40 cents per inch for 24 hours, or 30 cents if used in day time, and 20 cents if used at night.

Hinchey, Connery & Co., have bought the Wheeler ditch for \$1,500.

*Lewiston Journal*, May 3d: Some rich discoveries of quartz has been made east of the South Fork of Salmon. A tunnel 160 ft. was run in the Quartz Mining Cos. claim at Warren's, and 30 ft. more was expected to tap the vein. At Elk City Valley all the ditches were running full, and everybody is at work.

*Idaho World*, May 25th: A clean-up in the claim of Devine, Ellis & Co., on Granite creek, amounted to nearly \$10,000, after four weeks run. The claims of the company are extensive. The bed rock is not more than 10 ft. below the surface. There are about 300 men employed in the district, and they make \$30 per day to the man.

In a short gulch two miles above Walla Walla Flat, I. M. Johnson, after four weeks run, cleaned up over \$1,900.

Edmonson & Smith, at their first clean-up, realized \$1,000. P. B. Smith, on East Hill, made a clean-up of \$2,000. Sanders, Lindsay & Co., on Buena Vista Bar, have done equally well.



## MONTANA.

From the Montana Post of May 18th: Prairie Bar, one mile below Hoggins, is found to be very rich. It is two miles in length, and from 800 to 1,500 ft. in width. From 10 to 15 cts. per pan can be had in the grass roots, and from 10 to 50 cts. in the gravel. Several nuggets have been found weighing from \$15 to \$50.

At Highland, Packard's claim recently turned out a splendid nugget, weighing over \$340. Hiffner & McConn's claim gave its owners a beautiful specimen weighing \$115, and Campbell & Berkley's claim (Horse Gulch, a tributary of the Highland,) presented its fortunate owners with a nugget of about \$200.

Louis Burgher has discovered some 20 ledges 35 miles from Diamond City, in a S.E. direction.

One ton of dark-colored ore from the Andrew Jackson assayed at the rate of \$542.19 per ton in silver; while one ton of light-colored ore yielded \$158.34 silver and \$36 gold. The Benton lode yielded at the rate of \$245.05 per ton of dark-colored ore.

The Ballarat lode, at Highland, assays, on an average, \$140 per ton. The ledge is 47 ft. wide at a depth of 40 ft. on No. 3 north; and in the various tunnels and shafts varies from 28 to 47, according to the depth they have reached. There is scarcely a doubt that this lode is a second Comstock. Pope, Patton & Co. are putting a bed-rock flume in Alder gulch 2,000 ft. long. The company eluding on Pat McGovern's claim cleaned up, on Saturday, \$1,543 for six days run with four men.

Turnley's mill, in Grizzly Gulch, cleaned up 225 ozs. of retort after a six days run on Whitlatch Union ore.

## EMERALDA, NEVADA.

From the Esmeralda Union, May 25th: The new Philadelphia Reduction Works are rapidly approaching completion. The works are enclosed by a building 30x60 ft. The machinery is of the most approved kind.

The Juniata mine is again being worked. The shaft is progressing finely, and will soon be below the old works, where a large body of fine ore was left.

Two bars of ore are to be seen at Ruhl's & Co's assay office. They are the result of a crushing of 100 tons of ore from the Wilson lead, Pine Grove. One contains \$1,797.31, the other \$1,745.82. The fineness of one is .915, the other .891; value of both, \$3,543.14; yield per ton, \$35.43.

## PAHRNAGAT.

From the Salt Lake Vedette, May 25th: The editor is informed that 1,500 ft. in the Lela and Jessie lode, was lately sold in New York at \$25 per foot and the purchasers at once started machinery for that locality.

## REESE RIVER.

From the Reveille, May 27th: The Combination Co., of Silver Bend, have commenced grading for their mill. A spring half a mile from the mill, will furnish sufficient water. The water will be carried in iron pipes to a reservoir of 200,000 gallons capacity. The mill will have a battery of 40 stamps, one-half for wet ore, the other for dry.

The Keystone mill has been repaired and is now doing more effective work than ever. The mill is well supplied with ore.

Samples of peculiar looking ore from the Fisherman ledge, Reveille Dist., has been exhibited, which bears a marked resemblance to that obtained from the deeper workings of the Highbridge and Transylvania in Silver Bend. The ore is rich in deep colors, which are beautifully blended. The Fisherman is opened through an incline 40 ft. deep, at the bottom of which the vein has increased in size, and is now fully nine ft. thick. The ore is uniformly high, ranging from \$500 to \$700 per ton.

Silver Bend Reporter, May 25th: Ore taken from the Eagle and Magnolia ledges, Morey Dist., 15 miles north of Hot Creek, assays many hundred dollars per ton. Choice specimens give about \$750, while average pieces show about \$150. Several tons of ore have recently been worked at Austin, but with what result we have not learned.

The mill of the Twin River Co., which has been idle for a short time, is again at work.

Specimens of ore from the Oregon is so nearly like the Transylvania, that none but a connoisseur could detect the difference; the vein is 18 to 20 in. wide at the surface. The Colorado is about five ft. thick and the surface ore has been tested in an arrastra and gave a yield of \$160 per ton.

[Additional items from this District may be found on page 366 of this paper.] Humboldt.

Trespass, May 30th: The Montezuma is the principal mine in Trinity Dist. The lode has been worked to a depth of 18 to 25 ft. on the line of the ledge, with 24 ft. face.

About 15 tons of ore are extracted daily. Two tons of the ore yields 2,400 lbs. of bullion, or 60 per cent. metal.

The Alameda Co. have the machinery on the ground for an 8-stamp mill, which is to be erected and put in running order at once. Washoe.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Trespass, May 28th: The Imperial and Empiro Co., have commenced work on their new hoisting works. The front wall will be 165 ft. long, 5 ft. wide at the bottom, and 2 ft. on the top, and 8 ft. high. The balance of the foundation will be 3 ft. high and 2 ft. thick; there will be a crib built around the shaft 4 ft. thick and 8 ft. high, raising the shaft on a level with the front wall, making it a part of the shaft proper.

The Yellow Jacket Co., have completed the foundation for the new engines, recently built at Marysville. They will be put in position as soon as they can be transported over the Sierra. The fine Corliss engine now in use will drive the pumping machinery.

May 30th: The Illinois Mill is now at work, crushing 30 tons per day.

The Gold Hill correspondent of the Flag of this city, writes: The shaft on the Imperial and Empiro is down 900 ft., at which point they will run a drift to the ledge.

Enterprise, May 28th: Work has been resumed on the old Sacramento Claim, Cedar Hill. Already 60 tons that will pay from \$75 to \$100 per ton has been taken out. Steele & Rennie have leased Weston's mill, on Gold Cañon. Also 150 ft. of the Sacramento Co's ground. They will take out 15 or 20 tons per day. The Pcytonia contains the same quality of ore as the Sacramento. Several pieces from the dump, were filled with particles of free gold. The bullion is worth \$15 per oz. The Sacramento contains 3,000 ft. of mining ground.

June 1st: At the Gold Hill mine ore is being hoisted from the 380-foot level, also from the 150-foot level, of a quality superior to that taken out last month. The yield will be at least 30 per cent. greater this month than last.

The Petaluma Mill Company have purchased of the Savage Company two large hoilers, each 34 inches in diameter and 16 ft. in length, and each containing 36 flues.

The Sierra Nevada Co. are still engaged in putting in their pumping machinery.

The Chollar-Potosi Co. are now taking out from 350 to 400 tons of ore per day.

June 2d: The hoisting works used to do the hoisting in sinking the new shaft of the Imperial and Empiro, have been torn away to give place to the new works in course of erection. A large force of men are clearing away the old rubbish, laying the foundation for the new works, and framing the building. The large Cornish pump of 300 horse power will be placed in the new works. The cylinder of this engine is 42 inches bore and 12 feet stroke. It is calculated the capacity of this pump is sufficient to free all the mines of water from the Yellow Jacket to the Bullion. The new shaft of these companies being 100 ft. deeper than any other in Gold Hill, will drain all the mines in the vicinity to a level with itself.

During the past week Wells, Fargo & Co., shipped 12,088 pounds of assayed bullion, valued at \$357,855.86.

From Enterprise, June 4th: The Yellow Jacket company has just declared a dividend of \$75 per foot, payable on or after the 1st inst., at the Bank of California, in San Francisco.

## UTAH.

From Salt Lake Vedette, May 25th: The editor saw the result of seven pans of dirt washed out of Brigham Cañon. He says: The gold looks rich, and some pieces are of good size. Rich gold and silver bearing quartz are known to exist at the head of the cañon. The only damper on its future is, that it is too near the city, only 25 miles. We are going to visit it ourselves, after a hit, when we can muster cheek enough to beg or borrow somebody's "broncho" and a week's "grub."

## OREGON.

From the Oregon City Enterprise, May 25th: Quartz of exceeding richness has been discovered near White Bluffs. The exact location is as yet kept secret.

A piece of quartz has been found in Jackson county which weighs 140 ozs. It is expected to yield 100 ozs. of gold.

The Jacksonville Press says that \$6 or \$7 diggings have been discovered at the head of Jack's creek. The diggings are some two miles in extent. Other diggings have been struck near the head of Applegate. The discoverers were Chinamen, one Celestial having picked up a piece of gold weighing 14 ozs.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 338.]

## TWIN RIVER DISTRICT.

Is situated on the eastern slope of the Toiyabe, fifty-five miles south of Austin, in about latitude 38 deg. 48 min. This district was first discovered by a Frenchman named Boulrand, who first wandered here early in 1863, and remained secluded and alone for over twelve months, packing in his provisions from Austin by night to prevent others from discovering his locality. Here he worked by himself alone in what was then one of the wildest regions of Central Nevada, performing an astonishing amount of labor for one so situated. He seems to have been impressed with the idea that vast wealth was hidden in the ample breadth and depth of an immense quartz lode, which he still owns, and on which he has applied most of his labor. This lode is called the Ophir, and is gigantic in size. Where the cañon cuts it, it is fully forty feet wide, giving a sectional view, rising nearly perpendicular sixty or seventy feet. But, notwithstanding its great size, it is not the "big thing" of Ophir Cañon. On one of Boulrand's trips to Austin, he confided his secret to a countryman of his, who, in turn, exposed it to Murphy, whose name the famous lode of the district bears. The latter, with a small party, followed the Frenchman here sometime in June, 1864, and, by closer observation, discovered that one of Boulrand's locations, situated a half mile further up the cañon, was immensely rich. This being unsuspected by Boulrand, the Murphy party took immediate possession of it, and when its value became apparent to the Frenchman, litigation followed, and he eventually recovered, by compromise, \$4,000.

In the summer of 1865, R. B. Canfield, then fresh from the Atlantic States, was drifting about among the rocks and shoals of those speculative days, when good fortune guided him to Ophir Cañon. Here he purchased the Murphy and parallel lodes for \$50,000 in coin (the original owners reserving one-fifth of the unassessable stock in mine and mill). Extensive preparations were at once begun for opening the mine in the most thorough manner, also for the construction of the most extensive reduction works yet built in Central Nevada. The mill is built of granite and brick, with the capacity of forty stamps; however, but twenty are yet in operation. Its cost can not have been less than \$250,000 with other improvements. This work, considering the inaccessible locality and the consequent enormous expense of getting material to it, stamps the originator as a person of remarkable energy. The mill is located two and a half miles above the mouth of the cañon, at an elevation of 1,800 feet above the valley, and to make this two and a half miles passable for wagons, \$8,000 was expended. The nearest material suitable for brick was seven miles below, in Smoky Valley, the brick costing \$40 per thousand delivered at the mill. All the lumber was hauled over thirty miles, and a large part over 200 miles, costing from \$100 to \$250 per thousand. The works were completed in September, 1866. By that time the mine was in condition to constantly supply them with ore, and the success of the mill has been unparalleled since. In less than two months after starting, over a ton of silver had found its way out of Ophir Cañon into the channels of commerce. The last quarterly returns have been given me as follows: 800 tons of ore, yielding at the rate of \$128 per ton, giving a total yield of \$102,400, or a monthly yield of \$34,133. On the completion of this mill, 1,400 tons of ore lay on the dump, and the ore is mined with such facility that the quantity has been but little diminished since. The enclosing rocks of the mine are granite on the east and greenstone slate on the west. Its greatest width appears to be about twenty-four feet of vein matter. It has an easterly inclination of about 40°, and the pay ore lies near the east or hanging wall, in a section from two and a half to five feet wide. The ore is in considerable variety, the major part appearing to be an extremely rich antimonial sulphuret, thickly mottled with stephanite, or brittle ore of silver. The ore is stained in the seams with light yellow, slightly tinged with green, indicating the presence of both lead and copper. Nearer the surface, very rich chlorido of silver, highly colored with green and blue carbonates, occur; also considerable native silver, in thin flakes, or leaves and

wires. The lode crops out only on the north side of the cañon, and can be traced a long distance in that direction, which is about magnetic north. The possession of the croppings on the hillside, however, would show the true trend of the lode to be several points east of north. The present works on the mine are near the south line of the company's claim, the McDonald Co. claiming south from the center of the cañon. It has been determined, from the lower level of the Murphy, that the rich ore extends to the McDonald ground, and preparations are in progress for extensive development by the latter company.

From the mill up to the summit (by the trail leading to Lone, which is eighteen miles due west), the last mile and a half of the two is very steep. The mountain is of slate and syenite. Near the summit several veins of moderate size occur in syenite, the predominating ore of which is a highly argentiferous galena. At this point, on the west slope of this range, a long ridge reaches down into Reese River Valley to within a few miles of Bramber's Station, and it is proposed to construct a grade over the Toiyabe here. This will make the most direct route from Virginia City to the rich section of Nye county lying east of the Toiyabe. Leaving the overland route at White Rock Station, the road makes a very slight detour to the south in passing through Mammoth; thence the road will run straight to Charnock's Pass, between Northumberland District and Silver Bend; thence on through Hot Creek to Reveille and Pahrnagat. It is claimed by advocates of this route that a saving in distance is gained over the old route via Austin and the Reveille Ranch of fully sixty miles, which I think is not far from true. The elevation of the mountains here makes this route objectionable for winter travel, as snow will be liable to obstruct it for short periods of a day or two at a time. In view of this, and for the accommodation of the mining section further south, another route, or branch, is now being opened. This starts from the overland route at the same point, diverging at Ellsworth, Mammoth District, whence it takes a southeast direction for thirty miles to Cloverdale, which is at the southern extremity of the Shoshone and Toiyabe ranges; thence easterly and northeasterly around the Silver Bend Range to Belmont. The distance in traveling to the latter place is only about fifteen miles greater than by the Ophir Cañon route, while the country traversed is comparatively level, and avoids all the mountain ranges, and is also free from sand, with the exception of a short stretch between Indian Springs and Belmont. This can be and I understand will be avoided, by striking northeast after leaving Cloverdale and passing through Manhattan District, which is situated a few miles south of Belmont. Notwithstanding much has been said to the contrary, this road does not make a deflection to the south of more than twenty miles in passing to Belmont and vicinity, and it must be fully fifty miles shorter than the northern route via Austin. I trust the serenity of the Reese River Reveille will not be disturbed by this bit of retaliation in kind. If they will refer to their issue of March 6th, they may find where they departed from their usual reliability in a bitter editorial, headed "Asking for Mail Routes," in which they charged one of the few faithful in a not very exemplary legislative body with selfish motives, for endeavoring to secure a just and much needed demand of his constituents, which was nothing more than asking for the establishment of a mail route, by which the residents of Union and Mammoth Districts could receive their California and steamer mail matter without its having to go 105 miles out of the way via Austin. Now, if the Reveille will keep its feathers unruined, the examination of a few more districts will bring us to Austin, from whence we propose to take the reader through Northumberland and Silver Bend, and on through Hot Creek to the "Great East"-ern part of Nye county "and Reveille," where we will compromise the matter by at least a column of the Press given to a description of what we see in that justly "famous district."

Eastward, or down the cañon, from the Murphy mine and mill, the road winds down a narrow chasm, with walls of granite rising abruptly in many places to the height of several hundred feet. Alongside the graded road, the bed of the cañon is occupied by a fine stream of water, that is lashed into foam as it dashes down on its short career to sink into the arid plain of Smoky Valley. The first cañon south of Ophir is called Last Chance. Several locations have been made upon this, but no work is being done on them at present. Two and a half miles north of Ophir we come to Wisconsin Cañon. Here a number of lodes have been located, which are said to promise well.

[To be Continued.]



## Mining and Scientific Press.

W. B. EWER, SENIOR EDITOR.

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## San Francisco:

Saturday Morning, June 8, 1867.

## Notices to Correspondents.

**CURIOS.**—Palladium was first discovered by Wollaston in 1803, and was originally announced to the public by an anonymous handbill, which was circulated in London, describing its properties, and stating that palladium, or new silver, was on sale at Mrs. Foster's. The secrecy thus observed was the means, as noticed in our publication of the 25th ult., of influencing Chenevix to abandon chemistry. Chenevix, from the mystery observed, was induced to infer that the alleged discovery was an imposture. Acting on this impression, he went to Mrs. Foster and purchased all the palladium in her possession, and set about examining, under the supposition that it was an alloy of some two known metals; and after several laborious experiments, felt convinced that he had ascertained the asserted palladium to be a compound of platinum and mercury, or an amalgam of platinum, made in a peculiar manner. These opinions were embodied in a paper, which was read by Dr. Wollaston, the then Secretary of the Royal Society, at one of its meetings, and afterwards published in its transactions. Soon after this publication, another handbill was circulated, offering a considerable price for every grain of palladium made by M. Chenevix's process, or by any other process whatever. No person appearing to claim the reward thus offered, Dr. Wollaston, about a year after, in a paper read before the Royal Society, acknowledged to having been the discoverer of palladium, and described the method by which he obtained it from a solution of crude platina in aqua regia. It is supposed that Chenevix inadvertently experimented with a solution of palladium, in place of, as he supposed, a solution of his amalgam of palladium, thus mistakenly applying the properties of one to the other. Dr. Wollaston, to his intimate friends, always emphatically declared that he did his utmost to induce Chenevix to withhold the publication of his paper, short of betraying his secret; but C. persisted in the accuracy of his deductions. Had Dr. W. anticipated the loss which science would have sustained in Chenevix becoming satisfied of his error, there can be no doubt but Dr. W. would have fully explained his discovery. The moral to be derived from this history is, that where no practical benefit is to be obtained from secrecy, mystery should invariably be avoided, as evil consequences may arise from it in the most unforeseen and not unfrequently in the most extraordinarily indirect manner.

**A YOUNG EXPERIMENTALIST.**—All pure aërial hodies expand and contract alike, thus differing from solid ones, each variety of which has its own special degree. It has been ascertained by Dalton and Gay Lussac that one thousand measures of dry air, when heated from the freezing to the boiling point of water, increases in bulk 375 parts. Air, therefore, at the freezing point, expands 1-480th part of its bulk for every degree of heat on Fahrenheit's scale—that is, 480 cubic inches at 32° becomes 481 at 33° and 482 at 34°, increasing one cubic inch for every degree. A contraction takes place for every degree below 32°; thus, 480 cubic inches at 32° diminishes to 479 at 31° and to 478 at 30°. The volume of air, therefore, at 32° would be doubled at 480° and tripled at 960°—the latter being about a dull red heat. Dry steam is subjected to the same law of expansion.

## Commencement Day.

The regular annual Commencement exercises of the College of California, took place at the College building in Oakland, on Wednesday last, and were observed with the usual ceremonies and *clat* which attend such exercises at our Eastern colleges. The day was as propitious as nature could provide, and the attendance and interest manifested was most encouraging for the future of this growing institution of learning. Among the distinguished gentlemen present was Gov. Low, Senator Cole, Gen. McDowell, Prof. Silliman, and many others from different parts of the Pacific coast, more or less prominent in the various professions. We have no space for a detail of the exercises; suffice it to say that they were all most highly satisfactory.

The commencement exercises were conducted by acting President Willey. Marcus Phillip Wiggins, of Oakland, and William Gibbons, of Alameda, were the only graduates. The first honor was taken by Mr. Wiggins and the second by Mr. Gibbons. The highest mark for class exercises is 5.00; Mr. Wiggins stood 4.55, Mr. Gibbons 4.29—both being well up in scholarship. Each performed well his part in the usual graduating exercises. It may be interesting to state in this connection, that not more than three or four persons ever reach the highest grade of 5.00—Rufus Choate was one of that small number.

The commencement oration by Prof. Silliman was excellent and eminently practical. His subject was mainly Practical Education, and he urged with great force and eloquence the necessity of educating the masses up to the needs of the day—of fitting them to be thoroughly, and in the highest sense practical. The effort was worthy of the national and world wide reputation which that gentleman has attained.

The honorary degree of Master of Arts was conferred upon Freeman Gates, Rev. James Wylie, George Tait, Frederick M. Campbell and Henry Hildebrand. The degree of D.D. was conferred upon John Chittenden, of London, England.

## THE ASSOCIATED ALUMNI EXERCISES

Commenced with an oration by Rev. Dr. Stone, of this city, who took for his theme the Relations of the College to the State. The effort was eloquent, ornate and elaborate; it was conceived and pronounced in the style and manner so characteristic of this eminent divine. The prospects of the future greatness of our State were most glowingly pictured, and its educational and practical progress set forth with an eloquence rarely equaled.

A poem written for the occasion by Frank Bret Harte, of this city, was read by Rev. Dr. Stebbins, and most enthusiastically received by the crowded audience.

The festival in the evening was, as it always was and ever will be, sumptuous, unique and felicitous in the extreme—a genuine feast of reason and most copious flow of soul. This cosmopolitan association of *litterati*, is a genuine California idea, and a most happy conception. It is just what we wanted here; It is applicable no where else; it is *unique* in character. Its beneficial influence in behalf of the cause of learning and science on this coast, is already felt and acknowledged. It will grow with our growth and increase with years, until beneath its kindly shadow it shall have matured into strength and fulness a galaxy of indigenuous *alumni*, which will constantly shine forth as local stars, until our whole western coast and vast interior shall be dotted with seminaries of learning, each with its own *alumni*, to pay their annual pilgrimage to their *alma maters*—then, it may be, that the Associated Alumni of the College of California will have gradually lost its anomalous character, and become as such institutions elsewhere—*indigenous*, instead of *associated*.

## AN IMPORTANT CONSIDERATION.

We cannot close this brief notice without urging upon the people of this State the great necessity and importance of supporting our own institutions of learning, in

preference to those of other States and other countries. There is a fact, of both social and political bearing connected with this suggestion, which is too little thought of by people everywhere. There is no calculating the loss to any State from the foreign education of its young men. The warm and generous associations of youth, the memories of their early friendships, ever center around their *alma maters*, and, as a necessary consequence, more or less around the State or people where they have received their college education. Their future impulses and influences will ever, through all their after lives, be more or less imperceptibly and unconsciously influenced by those early associations. When we send our sons abroad to be educated, we are wasting the life-blood of the State—we are making her most valuable citizens more or less alien to her interests and to her glory. Let Californians think of this matter, and weigh it well; let us have the same State pride in this that we do in many other things of far less moment, and in supporting our own colleges thereby more zealously guard the dearest and most holy of our privileges as a State.

## The Bulkhead.

We have received a pamphlet entitled "Specifications for building the Sea Wall along the Water Front of San Francisco," determined upon by the Board of Harbor Commissioners. It proposes that a channel sixty feet wide at the bottom, be excavated. The foundation of the sea wall, consisting of an embankment thirteen feet in width at the level of mean low tide, will be built in this channel, and the stones, previously broken, will be thrown in promiscuously, beginning on the center line, and allowed to settle until they produce a firm foundation, when a body of concrete, two feet thick and ten feet wide, will be laid upon this embankment, and the wall built upon it, constructed of solid masonry. The wall, proper, will be seven feet and three inches wide at the bottom, and nine feet eight inches in height. It will be vertical on the land side, and on the harbor side there will be a batter of two inches to the foot for seven feet and eight inches, where there will be an offset of two feet, forming a recess for the purpose of receiving the end of the timbers for a wharf. The top of the wall will be four inches below the official grade of the city. The face of the embankment on the harbor side will be protected by a rip-rap wall, of which no stone will weigh less than 500 pounds. The wall will extend from North Point to Rincon Point, including the China Mail Co's wharf. The work will be undertaken in sections, and will be proceeded with as fast as circumstances will permit.

True it is proposed to erect a sea wall around the entire front of our harbor which will defy the elements, and be not only a source of gratification, to know that such a wall protects our front, but will be of great commercial value. While our citizens are adorning and arranging the interior of the city, it is right and proper that the city approaches and surroundings be made not only ornamental, but substantial and enduring. The approach to our docks to-day presents an uninviting aspect; but with the proposed sea wall, partitioning the city from the bay, all this will be overcome, and the approach rendered more pleasing and satisfactory.

**APPOINTMENT.**—Dr. A. Kellogg, of this city, has been appointed Surveyor and Botanist to the Government party to be sent up on the revenue cutter Lincoln, to take formal possession of the new Russian purchase and establish custom house regulations in that Territory. Dr. K. and party will not probably be able to remain there more than eight or ten weeks; and of course will be unable in so short a time to make any extended explorations. The Doctor's industrious and observing habits will, however, even in the short time allowed, enable him to collect much interesting and valuable information with regard to the botany, topography and agricultural value of the country. Particular attention will be paid to its timber resources. The party will start another expedition in about six weeks.

## The Prize Essay.

The annals of San Francisco, although limited in years, are prodigal in instances of liberal contributions toward benevolent and useful objects; and not the least among such praiseworthy acts, is the offer of the Mechanics' Institute of a liberal prize for the best essay on the resources of the State, which shall include also useful and practical suggestions for their development. Rumor has it that the sum of \$1,000 is set apart for this purpose. Considering the fact that this Association is made up chiefly of that portion of our population which is not overhurdled with pecuniary means, the sum is most liberal, though not what it should be to call into active exercise the right class of minds to produce such a book as is desired upon such an important subject.

There is another organization, however, in this city, which more particularly represents its wealth, as the Institute does its energy and enterprise, the members of which would be infinitely more benefited by the good results which it is expected will flow from the production and extensive circulation of such a work; and some crude intimations have been thrown out that that Association would also come forward in aid of this praiseworthy enterprise. If the Chamber of Commerce should conclude to add a like amount to that offered by the Mechanics' Institute, the two sums, with the incidental gain which might be derived from a very small tax, over and above the actual cost of publishing the work, would probably be considered an inducement sufficiently liberal to set quite a number of our best minds at work upon the much-needed production. Taking into account the relative advantages which would accrue to the membership of the two associations, and their comparative pecuniary ability, together with the manifest inadequacy of the sums named, to the proper accomplishment of the end desired, we hardly see how the more wealthy organization can withhold its active assistance from the contemplated object. It should be borne in mind, in this connection, that any considerable addition to the price of the book, over the actual cost of its printing and binding, would defeat the main object of its production, which should be to secure for it the widest possible circulation; hence, its author must rely for his compensation almost or entirely upon the premium offered. The price named, even if materially increased by the contingency referred to, would be but small pay for the time, labor and pecuniary outlay which must be involved in the work; especially when we take into consideration the fact that but one out of the numerous contestants could realize at all.

It is highly important that whatever is done should be done quickly. We understand that the Institute has nearly completed its plans, and will soon make its official announcement. It would be well, if conjoint action is to be had, that both announcements should go out at the same time, or nearly so.

What should such a work be? This question will be more fully answered at another time; suffice it for the present to say that it should be a well-written, succinct treatise, embracing comprehensive, statesmanlike and economical views as to the best, speediest and most profitable mode of practically developing the resources of our State. It should be such a work as would present to the people of foreign countries, and to the emigrant just arrived upon our shores, a clear, distinct and truthful account of the extent and character of our varied resources. It should be eminently practical in its suggestions—not visionary or theorizing; and particular attention should be paid to distinctness and terseness. It should be compressed within a compass of from 300 to 350 large duodecimo pages, in long primer type. Such a volume would best secure the attention of the class of people sought to be instructed and influenced, while at the same time it would afford ample space for a really talented writer to sufficiently enlarge upon all topics important to be considered. Ten or twelve months, at least, should be allowed for the different competitors to prepare their work. Those who have the preliminary management of the matter in charge cannot be too careful in selecting for the final adjudicators of the merits of the respective essays, which may be offered, that such only shall be appointed as are well known for capacity, honor and integrity, and each as would instinctively shrink from anything like favoritism. Such a committee should also be so selected as to present, in its whole, a fair amount of technical knowledge upon the various topics which are to be considered in the proposed essay.



## The Pacific Oil Works.

NUMBER TWO.

## IMPROVEMENTS INTRODUCED.

The most difficult process of the manufacture of oil, is the proper application of the heat required in the different processes. But little is necessary; yet that little must be uniform and under the most perfect control. The first application of heat is during the grinding process, under the heavy stone wheels. This has generally been done by placing a furnace under the grinding plate; but Mr. Bruner has substituted steam, constructing the plate much after the manner of the bottom of a mining pan, with a steam chamber. By this means the desired uniformity and control is most fully attained. The chief object of heat in this stage of the progress, is to coagulate the albumen contained in the seed, which otherwise would hold in such close embrace a portion of the oil, that even the immense pressure of 600 pounds to the inch would not separate it. The oil is also thereby rendered more limpid, so as to flow more readily from the press. This application of steam heat is an important improvement over the use of dry heat.

The next application of heat is in the boiling, to which the oil is subjected immediately after being expressed. This is done in large, square iron kettles, made of boiler iron, holding 800 gallons each. The heat is applied by a coil of steam-pipe, reaching from the bottom to the top of the boiler. This, also, was formerly done by dry heat from a furnace under the kettle, and to a manifest disadvantage from its unequal distribution through the mass of oil. Perhaps the most important improvement introduced has been in this connection. In addition to the mode of heating here employed, Mr. Bruner has also devised a peculiar form of stirrer, which establishes and keeps up precisely the motion sought to be established in a mining pan, where every portion of the mass is successively and repeatedly brought under the mullers; the same kind of action and motion is here established, and by it every particle of the oil is thrown up from the bottom and center of the kettle, and from within the coil, over which it passes, down again on the outside, and thence again under the stirrers and upward. This action keeps up a constantly uniform temperature through the whole mass of oil, and produces just the kind of agitation necessary to attain the desired chemical action. The object of this boiling is to increase the siccative or drying property of the oil. To still further increase this change, from five to eight per cent. of litharge is added to the oil while boiling, a large portion of which is dissolved, or forms a chemical union with the oil. In many manufactories various substitutes are used for litharge, such as oxide of manganese, oxide and sulphate of zinc, magnesia, barytes, etc. It being the object of this concern, however, to establish an unexceptional reputation for the character of its products, no adulteration is allowed in any part of the manufacturing operations. The entire combination of processes by which this mill is operated is covered by four patents, held by Mr. P. B. Bruner, the Superintendent, and Mr. Charles Moore, and still another patent is about being applied for. This mill and machinery is a perfect model for excellence of workmanship, convenience and economy of operation and perfection with which it accomplishes its work, and preserves, in its best condition, the product of its manufacture. This latter forms no small item in the value of its productions, as even very slight variations of temperature and other exposure are liable to very materially affect the products.

## OIL CAKE.

The refuse left after the expression of the oil is known as "oil cake," and is an article of great importance to the agriculturalist, being extensively employed in some countries as a food for stock. It is said to greatly improve the condition of the animal which is fed upon it; giving to the hide and hair a smoothness and glossiness of coat unattainable by any other means. Great care is taken at this establishment to keep the cake perfectly sweet and pure; the rooms where it is stored are high, dry and well ventilated, thus preventing the appearance of moist or mould. Oil cake is not appreciated in this market as it should be for feed, although it is largely used in England. In addition to the great quantities of home manufacture there, from 50,000 to 60,000 tons are annually imported, chiefly from India. A considerable quantity has already been shipped to Liverpool from these works, where it commands over \$50 per ton, while it has been offered in this market at \$30, and a superior article to that generally found in Europe. The cake is usually sold as a meal, being broken up and ground fine in a suitable mill, in which condition it much resembles Indian meal. Our lively stable men and others would do well to experiment a little with this feed. A small quantity given to an animal each day can scarcely fail to be advantageous, and, in proportion to the nourishment which it contains, will certainly be found cheaper than any other food.

## IMPORTANCE OF THE ENTERPRISE.

These works are now in the full tide of successful operation, and have added a most important branch to our manufacturing industry. If our agriculturists will only take proper advantage of the facilities they offer them to vary their products, they will soon tell most advantageously upon the State, and lay the foundation for a branch of industry which shall scarcely be second in commercial importance to any agricultural product on this coast. The demand for vegetable oils is increasing everywhere throughout the world. That supply is now chiefly derived from the East Indies; but the skilled labor and improved machinery which can be brought to bear in this country, both in the field and in the mill, is more than a match for the cheap, unskilled labor by which these oils are produced in the semi-barbarous countries of Eastern Asia; while the remarkably favorable semi-tropical climate of California and her rich and virgin soil can nowhere be excelled in either the quality or quantity of the productions under consideration. California might be made to supply the world with the chief portions of the vegetable oils. If she does not, the fault will be her own, for nature has especially constituted her for such production. With her oil, her corn, her wine, her precious metals, and almost all other things which she can readily add thereto, what may not be her future?

**PREMIUM LIST.**—We are in receipt of copies of the premium list of the State Agricultural Society for 1867. The premiums are more liberal than ever before offered, especially for agricultural and manufactured products, and for agricultural and mining machinery. This is as it should be, and it is hoped that the coming Fair will be a true and fair showing of the material prosperity and abundant resources of the State. A limited number of copies of the pamphlet can be had, by those more especially interested, by calling at this office.

**HOME CURED MEATS.**—An evidence of the growing appreciation felt in home productions, may be instanced in the fact that Mr. W. K. Deitrich, of the Washington Market, has been compelled to open out a triple stall for the accommodation of his increasing business. He spread a free, bounteous and flowing table for his friends and patrons on Saturday last.

**JACOB SEW,** Pioneer Photographer, 612 Clay street, north side, four doors above Montgomery, (late 315 Montgomery street), takes all kinds of Photographs in the best style of the Art. He would invite especial attention to the new "Cabinet Photographs," which he is, taking to perfection. 16v14tr

Persons desirous of obtaining the finest Wood Engravings, can procure them only by having the picture photographed on the block, by  
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No. 23 Third Street.

**SOMETHING NEW ON THIS COAST.**—Dr. H. A. BENTON has purchased one of Masse's Patent Electric machines, with a powerful Battery, and so connected with a bath that the electric currents can be directed to any part of the system, or make local applications to either. This kind of bath is doing miraculous things at the East, and the Medical Faculty are compelled to admit its utility—for many diseases which defy skill in medicine. We can play upon the nerves as readily as the fiddler can play upon his instrument, dispelling pains, and with proper chemicals can extract mineral and other poisons from the system. With this Bath, and the Hot Air Medicated Bath, with its kindred applications, all diseases, curable, can be relieved very soon. The public are invited to call and see the facilities of our establishment, at No. 314 Bush street, adjoining Russ House, from 9 A. M. to 8 P. M. 23v14-11

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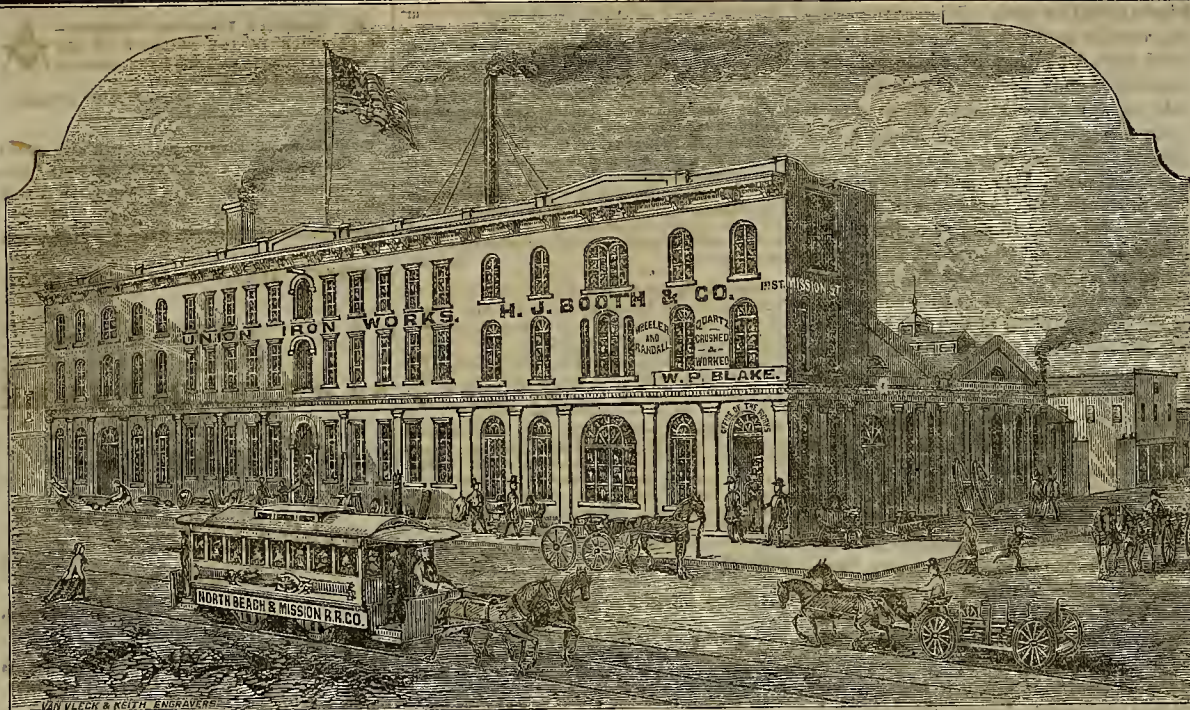
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Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.

18v12

**FULTON**

**Foundry and Iron Works.**

**HINCKLEY & CO.,**

MANUFACTURERS OF

**STEAM ENGINES,**

**Quartz, Flour and Saw Mills,**

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-47

**NEPTUNE IRON WORKS,**

Corner of Mission and Fremont Streets,  
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**MARINE**  
**Locomotive,**

And all kinds of

**HIGH PRESSURE**  
**Steam Boilers**

MADE.

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil

Stills, Wrought Iron Worms, etc., etc.

Manufactured to Order.

**Old Boilers Repaired**  
**D. CAMERON.**

5v12-ly

A NOVEL CLOCK may be seen at Mr. Randolph's jewelry store on Commercial street, Nevada City. Instead of "striking" the hours of the day, when the proper time arrives, a door opens, a little automaton bird slips gaily out and "cuckoos" the required number of times. The editor of the *Gazette* of that city, thinks it comes the nearest to a "live clock" of anything he has ever seen.

**TABLE ROCK DOOMED.**—It said that in consequence of the constant giving away of Table Rock, at Niagara Falls, and the danger of accidents therefrom, the town council of Clifton, Canada, within whose jurisdiction it is located, have determined to blow it away with "villanous saltpeter."

**THE DRAW BRIDGE** across the Willamette is currently talked about at Portland, Oregon. A party in this city has offered to construct the same for \$149,042. The plan is the same as that across the Sacramento in this State. It is stated by the *Oregonian* that active steps will soon be taken for the construction.

**GOLD MINING IN CANADA.**—It is said that there are seventy-three gold mines in Canada, employing 708 miners. The London Mining Journal says that during the last quarter of 1865 the yield of gold was \$690,000.

**National Mineral Land Law, Instructions.**  
Blanks, Etc.

Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address Dewey & Co., office Mining and Scientific Press, San Francisco.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better

Than other offices

In this City,

Try them

With a Job,

And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,

Over Pacific Fruit Market.

**CITY IRON WORKS COMPANY.**

F. CLERC, B. KIRKINGLAUS, W. DEERIE.

**CLERC & CO.,**

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.

9v146m

J. NEWSHAM. J. BIGWOOD.

**SOUTH BEACH IRON WORKS,**

Near corner of King and Third streets, San Francisco.

**MARINE ENGINES,**

AND ALL KINDS OF

**MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed. 18v14-17

**JOHN LOCHHEAD'S**

**Steam Engine Works,**

Beate street, near Mission, San Francisco.

**STEAM ENGINES OF EVERY DESCRIPTION BUILT**  
to order—Marine, Stationary, or Locomotive.

**HOISTING AND PUMPING ENGINES,**  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTY SEVEN ENGINES.  
Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**MINING IN MARIN COUNTY.**—The Marin Journal says that a contract has been let by the Union Copper Mining Co., to W. P. McCormack to extend the tunnel of the company fifty feet, at \$11.50 per foot. They have already bored eight hundred and forty feet into the bowels of the mountain, and their prospect at the present time is said to be very flattering.

**PETROLEUM.**—During the four days ending April 12th, the receipts of petroleum at the port of Pittsburgh reached the unprecedented amount of 97,284 barrels, the greatest amount ever received in the same duration of time since the establishment of the oil business.

Good plumbago is said to have been discovered in Sumner, Oxford county, Maine.

**B. F. HOWLAND,**  
PHOTOGRAPHER,  
Nos. 25 and 27 Third street, east side, near Market street,  
San Francisco.

Enamelled Cards, Ambrotypes and San Pearls, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cartes de Visites only 25¢ per dozen; vignettes at 5¢ per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v11-6m

**JOHN TAYLOR & CO.**  
IMPORTERS,  
AND DEALERS IN

**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
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WE are receiving direct from MESSRS LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, MUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865 11v10-1f

**The Mercantile Gazette**  
—AND—  
**PRICES CURRENT,**  
E. D. WATERS & CO., Prop'rs.  
Office, Northeast corner Clay and Battery sts.,  
SAN FRANCISCO.

The Mercantile Gazette and Prices Current is the only  
**Commercial Paper**  
**ON THE PACIFIC COAST.**  
PUBLISHED EVERY STEAMER DAY.  
Terms, \$9 per Year, payable in advance.

**THE LETTER SHEET PRICES CURRENT**  
For enclosure in letters, is also published every  
STEAMER DAY.  
13v13f

**PACIFIC POWDER MILL**  
COMPANY'S  
**BLASTING POWDER!**  
MANUFACTURED  
**IN MARIN COUNTY,**  
CALIFORNIA.

FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
AGENTS,  
414 Front Street, San Francisco.  
8v14-1m

**Copartnership Notice.**

THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO. for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCILL, HOWARD, CHATMAN,  
San Francisco, Feb. 1, 1867. 12v13-3m



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.  
The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern, Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c. &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call special attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greene Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.  
**GODDARD & COMPANY.**

A. S. CHURCH. S. B. CLARK.  
**CHURCH & CLARK,**  
IMPORTERS AND DEALERS IN  
Mediterranean and California  
**FRUITS, NUTS, CONFECTIONERY, Etc.,**  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 407 Front st., San Francisco.  
Printed list of kinds and prices furnished. 8v  
15v14-6m12p

**NEW YORK PRICES.**  
WATCH REPAIRING AT NEW YORK PRICES.  
**C. E. COLLINS.**  
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**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
ENGLISH AND SWISS WATCHES,  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry 25v10-6m  
**NEW YORK PRICES.**

**THE WILCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly. Come and see it, or send for Report of the trial.  
SAMUEL SWIFT, Agent,  
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**LUCY & HYMES,**  
MANUFACTURERS OF  
**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**  
Factory—Beale st., bet Mission & Howard.  
Office, 319 California street, San Francisco.  
17v14f

**To Capitalists,**  
**GOLD QUARTZ MINE,** SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc. FOR SALE. The mine has three main veins, and more than \$50,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to  
BELLING FREEMAN, Bankers,  
335 Clay street, San Francisco.  
23v13-6m

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
**On Saturday, February 9, 1867.**  
An Entirely New Style of  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most drossy Hat ever introduced on the Pacific Coast.  
Call and see them. 8v14

**ITALIAN MANUFACTORY**  
OF  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 Sansome St. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.  
Prices varying from \$1.50 to \$2 per day for Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.  
Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents 21v12  
F. E. WEYGANT, Proprietor.

**Just Published.**  
THE PHILOSOPHY OF MARRIAGE, BEING FOUR IMPORTANT LECTURES ON FUNCTIONS AND DISORDERS of the Nervous System and Reproductive Organs, to be had by addressing and enclosing twenty-five cents, postage stamps to Secretary PACIFIC MUSEUM OF ANATOMY, Montgomery street, San Francisco. 12v13-1y

**Machinists and Foundries.**

**Miners' Foundry**  
—AND—  
**MACHINE WORKS,**  
Nos. 245 to 255 FIRST STREET,  
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**HOWLAND, ANGELL & KING,**  
PROPRIETORS,  
Manufacturers of Machinery for  
QUARTZ MILLS. FLOUR MILLS,  
SAW MILLS. SUGAR MILLS,  
POWDER MILLS, PAPER MILLS,  
Steam Engines of all Kinds.  
Amalgamators of all Kinds.  
MINING PUMPS. HOISTING WORKS,  
OIL WELL TOOLS. ROCK BREAKERS,  
—AND—

Machinery and Castings of all kinds, either of Iron or Brass.  
Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russia Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable of any Engine in use.

W. H. HOWLAND, E. T. KING,  
H. B. ANGELL, CYRUS PALMER.  
13v14-qr

**Vulcan Forge**  
—AND—  
**MACHINE SHOP.**

**L. P. GARCIN,**  
No. 32 Sutter street, between Sansome and Montgomery,  
MANUFACTURER OF  
**Printing Presses & Printers' Material,**  
Contractor for all kinds of

Machinery, Patterns, Models and Drawings for the Patent Office at the City of Washington. Tool Maker for all branches of mechanics. Repairing done at short notice and perfectly executed. All work guaranteed.  
14v14-1y

**JAMES MACKEN,**  
**COPPERSMITH,**  
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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.  
Repairing promptly and neatly attended to.  
13v11

**Pacific File, Reaper and Mower Section**  
**MANUFACTORY,**  
No. 53 Beale Street, between Market and Mission,  
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Files Recut and warranted as good as new, or no charge. The only establishment in the State. We also manufacture Reaper and Mower Sections.  
12v14-3m DURNING & FISHER, Prop'rs.

**Hazard's Powder.**  
**BLASTING AND SPORTING**  
**GUNPOWDER,**  
SUPERIOR QUALITY.  
Also, SAFETY FUSE OF ALL KINDS.  
**EDWARD H. PARKER,**  
Agent for the Hazard Powder Company, 224 California Street.  
13v14f

**Dr. Hufeland's Swiss Stomach**  
**Bitters.**  
THE WORLD RENOWNED REPUTATION, TOGETHER with the extensive and increasing demand for Dr. Hufeland's Swiss Stomach Bitters, will at once recommend them to the favorable notice of all connoisseurs and lovers of a good and healthful tonic and invigorator. As a purifier of the blood, acting surely, yet gently, on the secretions of liver and kidneys, they are unsurpassed and a most agreeable drink.



For sale at all wholesale and retail stores on the Pacific Coast, and at the depot of TAYLOR & BERDELL, 413 and 415 Clay street, between Sansome and Battery, San Francisco. 21v14-6m



## A Word to Readers in the Atlantic States.

Much complaint has reached us, through various sources, at the general lack of knowledge at the East, with regard to mining and other operations on this coast, and the frequent impositions practiced upon the public there, in consequence, by irresponsible persons passing off upon unsuspecting victims worthless mining stock, or persuading them, by false representations, to organize companies and advance moneys upon worthless ground, or ground which oftentimes has neither value or locality. If our friends at the East, who are still anxious to engage in the laudable venture of mining enterprise, would do so intelligently, let them subscribe for and carefully consult the only journal on the Pacific coast where every mining enterprise that is worth naming is, from time to time, noticed, as its merits may warrant. A mining enterprise on the Pacific coast, which is not referred to in this journal, in some way or other, as often as once in three or four months, is certainly one which people in the Atlantic States should beware of. Our advice to people at the East is never to venture small amounts in mining. If you must start small, let a number of such club together, so as to make the aggregate amount to be invested, such as may be worth your while to inquire into. Jan. 1, 1867.

## Golden City Chemical Works.

**LABORATORY,**  
Corner of Seventh and Townsend Streets.  
**OFFICE,**  
Corner of Montgomery and Bush Streets.

**CAPITAL STOCK, - - - \$500,000**

**Trustees:**  
H. P. WAKELEE, THOS. H. SELBY,  
NICHOLAS LUNING, THOS. BELL,  
CHAS. E. McLANE.

**H. P. WAKELEE.....MANAGER.**

**THIS COMPANY ARE NOW PREPARED TO FURNISH**  
Sulphuric, Nitric and Muriatic Acids of superior quality, in quantities to suit.

Orders will be received at the office on'y for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed. 9v14 3m

**WE ARE NOW OFFERING**  
**OUR IMMENSE STOCK**

**Fine Custom Made Clothing**

**Gents' Furnishing Goods**  
**AT PRICES THAT DEFY COMPETITION.**  
Our Stock of Clothing Consists of  
**ALL THE LATEST STYLES**

**A Large Assortment of**  
**Trunks, Valises, Carpet Bags, Blankets, Etc.,**  
**AT EXTREMELY LOW PRICES.**

**J. R. MEAD & CO.,**  
8v10 Cor. of Washington and Sansome streets.

**BLAKE'S PATENT**  
**QUARTZ CRUSHER.**

**CAUTION!**  
The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1866.

**This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.**

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials are crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages. **BLAKE & TYLER,**  
1v14tf Agents for the Pacific Coast.

## Trades and Manufactures.

**WM. BARTLING. HENRY KIMBALL.**  
**BARTLING & KIMBALL,**  
**BOOK BINDERS,**  
Paper Rulers and Blank Book Manufacturers.  
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15v12-3m SAN FRANCISCO.

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(SUCCESSOR TO O. GORD)  
**MARBLE WORKS,**  
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco  
Mantels, Monuments, Tombs, Plumbers' Sinks  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders re-  
spectfully solicited. 5v8-3m

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General Furnishing Undertaker,  
611 Sacramento St., corner of Webb, San Francisco.  
Barstow's Metallic Burial Caskets and Cases,  
1tf

**Palmer's Patent**  
**ARTIFICIAL LEG,**  
Manufactured in Philadelphia, Penn.  
**JARVIS JEWETT, AGENT.**  
629 Washington Street, San Francisco, Cal. 10v8-1m

**HUCKS & LAMBERT,**  
SOLE MANUFACTURERS OF THE CELEBRATED  
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Natoma Street and North Beach,  
2v13-3m SAN FRANCISCO.

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Established 1849.

**C. NUTTING,**  
Manufacturer of  
**Fire-Proof Doors and Shutters,**  
BANK VAULTS, PRISON CELLS, BALCONIES, AWN-  
INGS, ORATINGS, IRON FENCE, STAIRS, Etc.,  
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CUTLERS, LOOKSMITHS, BELHANGERS  
And Model Makers.  
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**LEATHER HOSE AND BELTING,**  
ALL SIZES.  
**SUCTION HOSE MADE TO ORDER**  
At short notice, by

**M. M. COOK & SON,**  
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**Cordage Manufactory!**

CONSTANTLY ON HAND A LARGE ASSORTMENT  
—OF—  
**MANILA CORDAGE,**  
Whale Line, Bale Rope, etc.,  
Manufactured from Pure Manila Hemp.

Office, at TURBS & CO'S, 611 and 613 Front street.  
1v14-1q Manufactory at the Potrero.

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MANUFACTURERS AND ENGRAVERS

**METALLIC SIGNS,**  
AND SIGN PAINTERS,  
Corner of Montgomery and Pine Streets,  
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Door Plates and Office Signs made to order at short  
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**J. M. STOCKMAN,**  
Manufacturer of  
**PATTERNS AND MODELS,**  
(Over W. T. Garratt's Brass Foundry.)  
S. E. Corner of Mission and Fremont sts.,  
6v14tf SAN FRANCISCO

**—USE—**  
**EMERY & EATON'S**  
**GREEN SEAL SMOKING TOBACCO.**  
15v14-6m No. 518 Battery street.

**Important to Secretaries.**

Secretaries will please write proper names and figures distinctly, and hand in their advertisements as early in the week as practicable. Our latest forms go to press Friday evening. Any information concerning the requirements of the law regarding advertisements will be cheerfully given when solicited. Inspect all your notices carefully upon their first appearance. In case of postponement, give the earliest notice possible at the office. When copy is received sufficiently early, a proof-sheet will be furnished if desired. A revised copy rendered, for advertising at the mine, when requested. Neatly printed copies of advertisements, for serving individual notice to stockholders, printed at \$1 per hundred. Copies of the new advertising law, as officially published, furnished gratuitously. Blank forms, for filling out Assessment Notices and Delinquent Sales, supplied free to advertisers in the Mining and Scientific Press on application at the office.

**DEWEY & CO., Publishers.**  
505 Clay street, corner Sansome, San Francisco.

**Illegal Supplemental Advertising.**—It would be well for Mining Companies, whose advertisements are repeatedly appearing in the Supplements of daily papers, to inquire into the legality of that class of advertising.

## Professional Cards.

**SHERMAN DAY,**  
Mining Engineer,  
No. 114 Montgomery Block, San Francisco.  
Will examine, survey and report upon mines, and consult and advise concerning investments in mining property, or the machinery management and expenditures of mines.  
22q

**CHAS. LIEBENAU,**  
Mining Engineer and Metallurgist,  
(Graduate of the Mining Academy, Freiberg, Germany.)  
Oro, Flint District, Owyhee Co., Idaho.  
References:—George Hearst, John W. Gashwiler, Richd. Heine & Co., and J. M. McDougal, San Francisco; E. R. Purple, New York; William Bigler, Penn. 14v14-3m

**FREDERICK MANSELL.**  
Mechanical & Architectural Draughtsman,  
No. 422 California street, corner of Leidesdorff.  
Drawings of MONUMENTS made for parties applying for pa-  
ents at Washington or London. mar23-1f

**E. V. JOICE,**  
**NOTARY PUBLIC.**  
N. E. cor. of Washington and Battery sts.  
12v14tf SAN FRANCISCO.

**FRANKLIN E. FELTON. JAMES M. TAYLOR.**  
**FELTON & TAYLOR,**  
Attorneys and Counsellors at Law,  
Court Block, 636 Clay Street,  
SAN FRANCISCO.  
Will practice in the State and Federal Courts. Special at-  
tention given to proceedings under the Patent Law. 18v14-1q

**GEO. T. KNOX and E. V. SUTTER,**  
COMMISSIONERS OF DEEDS.

**NOTARY PUBLIC,**  
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16v14tf SAN FRANCISCO.

**W. E. GOLDSMITH,**  
Card and Seal Engraver,  
505 Montgomery street, up-stairs, (over Tucker's),  
SAN FRANCISCO.

Wedding and Visiting Cards printed with the utmost neat-  
ness; Notarial, Commissioner and Society Seals. 19v13-2q

**DR. H. AUSTIN,**  
**DENTIST,**  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-qy

**J. W. WINTER,**  
**DENTIST.**  
Office, 617 Clay street.....San Francisco.  
First-class gold fillings for \$3, as good as any dentist can  
produce in the city. Dr. Winter has practiced Dentistry  
twenty years—fifteen in this State. For a full upper set of  
gum teeth, on vulcanite base, from \$30 to \$35. Teeth ex-  
tracted without pain by local application. 15v14-1f

## Overland Route.

**THE PENINSULAR AND ORIENTAL**  
STEAM NAVIGATION COMPANY'S

**STEAMSHIPS**  
Leave Hongkong Twice a Month,  
On the 1st and 15th in the Northeast Monsoon,  
and about the 11th and 29th in the  
Southwest Monsoon.)

**SOUTHAMPTON AND MARSEILLES,**  
**VIA EGYPT,**  
Calling at Singapore, Penang,  
Point de Galle, Aden, Suez, Alex-  
andria, Malta and Gibraltar.  
From Point de Galle their steamers run to Madras,  
Calcutta, and Bombay, twice a month, and once a month  
to King George's Sound, Melbourne and Sydney.  
From Hongkong their steamers run constantly to  
Swatow, Amoy, Poochow, Shanghai, and Yokohama.  
Hongkong, 1867. 13v14tf

**Important to Californians.**—Many inventors have  
lately had their claims for Patents seriously (and in some  
cases fatally) delayed by the unqualification of agents who  
have not complied with the Government license and revenue  
laws, as well as other new and imperative regulations.  
These discrepancies, although arising from the inexperience  
of honest agents, are none the less dangerous to applicants  
for patents, whose safest course is to trust their business  
with none but active and experienced solicitors. The MIN-  
ING AND SCIENTIFIC PRESS PATENT AGENCY has strictly com-  
plied with the regulations of the Department, and properly  
filled all necessary papers as Claim Agents.

## Metallurgy.

**BOALT & STETEFELDT,**  
Metallurgists and Mining Engineers  
**AUSTIN, NEVADA.**  
Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

**G. W. MAYNARD. J. H. TIEMANN.**  
**MAYNARD & TIEMANN,**  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
**CENTRAL CITY, COLORADO.**  
15v12-1y

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—AND—  
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their chemical character, after a careful analysis has been  
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lous ores," are having especial attention paid to their suc-  
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here offered to acquire a sound practical knowledge of the  
business.  
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States, two cents.



## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

## New Mining Laws of California and Nevada.

We have just issued, in cheap edition, the new laws relating to mining and corporations in California and Nevada, passed in 1865-6. Some of these laws are of the highest importance to parties interested in the matter of locating and holding claims, and prospecting mines, in these States. Copies sent by mail. Price, 25 cents.

Address, DEWEY & Co., Patent Agents.  
San Francisco, May 1st, 1866.

## New Mining Advertisements.

## Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of June, 1867, an assessment of three (\$3) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansone and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 5 Government House, corner of Washington and Sansone streets. J. M. BUFFINGTON, Secretary.

## To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with access to all the best markets, and with more than \$50,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 535 Clay street, San Francisco.

## Mining Notices—Continued.

## Adella Gold Mining Company, Rock Creek, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-ninth day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 429 Pacific street, San Francisco, Cal. J. C. TAYLOR, Secretary.

## Cineo Schorea Gold and Silver Mining Company.

Copala, Sinaloa, Mexico. Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 525 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.  
Office, No. 525 Clay street, San Francisco, Cal. my4

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment, is hereby postponed until Saturday, the 28th day of June, 1867, and the sale thereof until Saturday, the 30th day of July, 1867. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.

## Chilpaneca Mining Company—District of Ores, Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, No. 318 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. jel

## Cordillera Gold and Silver Mining Company, Chihuahua, Morcles Mining District, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of April, 1867, an assessment of one (\$1) dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 321 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.  
Office, 321 Washington street, San Francisco, Cal. my25

## Camargo Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Camp, Jas.	74	5	\$100.00
Drinkhouse, J. A.	6	5	60.00
Dinkelspiel, J.	51	10	60.00
Harker, W. B. C.	24	10	20.00
Harker, J. W.	134	3	60.00
Jacobs, N. B.	85	1	20.00
Fassett, N. C.	132	1	20.00
Gray, Asaph.	133	3	60.00
Lander, B. C.	69	6	120.00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mar30

POSTPONEMENT.—The above sale is hereby postponed until Friday, the 21st day of June, 1867, at the same hour and place. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

## De Soto Gold and Silver Mining Company—Location of Works: Star District, Humboldt County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twentieth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
Belldeman, J. C.	157	10	\$9.00
Belldeman, J. C.	430	8	8.00
Bigger, E. A.	632	8	8.00
Byrnes, John.	596	5	3.00
Slater, J. H.	60	10	6.00
Dock, Luther.	607	10	6.00
Darby, Thomas.	777	10	6.00
Derby, E. M.	bal on 498	4	2.40
Davis, W. W.	6	3	3.00
Fraser, James.	763	6	3.00
Fitch, J. B.	bal on 568	12	3.60
Glover, G. M.	812	40	24.00
Harris, J. H.	60	60	60.00
Hutchinson, J. R.	826	100	60.00
Knowlton, G. H.	597	6	3.00
Patton, W. R.	808	50	30.00
Richards, George.	820	3	3.00
Sanderson, George.	829	50	30.00
Thomas, Richard.	749	5	3.00
Wenrhold, C.	612	10	6.00
Wilson, R. B.	622	10	6.00

And in accordance with law, and an order of the Board of Trustees, made on the said twentieth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 18 Exchange Building, northwest corner of Washington and Montgomery streets, San Francisco, Cal., on the nineteenth day of June, 1867, at the hour of one o'clock P. M. of said day, to the highest bidder, for each, in U. S. gold coin, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN M. BURNETT, Secretary.  
Office, No. 63 Exchange Building, northwest corner of Washington and Montgomery streets, San Francisco, California. jel

## Hanscom Copper Mining Company. Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of May, 1867, an assessment of twenty-five cents (25c) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN HANSCOM, Secretary.  
Office, at the 429 Pacific street, San Francisco, Cal. my25

## Hope Gravel Mining Company—Location of Works and Property: Grass Valley, Nevada County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 14) levied on the fifteenth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
McAlmond, E. H.	32	78	\$78.00
McAlmond, E. H.	122	10	10.00
McAlmond, E. H.	123	40	40.00
McAlmond, E. H.	125	6	6.00

And in accordance with law, and an order of the Board of Trustees, made on the fifteenth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at No. 327 Montgomery street, San Francisco, Cal., on Tuesday, the eleventh day of June, 1867, at the hour of 12 o'clock noon, of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. my25

## I. X. L. Gold and Silver Mining Company—Location of Mine: Silver Mountain District, Alpine County, Cal.

Notice.—There is delinquent upon the following described stock, on account of assessment levied on the thirtieth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Jas Barron.	287	2	\$3.00
H G Bissell.	287	10	16.00
H G Bissell.	287	1	1.60
John F Davis.	282	4	6.40
Wm Davidson.	74	1 1/2	2.25
C R Callender.	214	4	6.40
P H Dickenson.	224	10	16.00
John Hogan.	176	7	10.50
J A Johnson.	283	1	1.60
Isiah Leckro.	211	5	7.60
Isiah Leckro.	212	1	1.60
Martin C Miller.	284	1	1.60
Geo C McAllister.	214	4	6.40
Samuel Nicholson.	167	6	7.60
Nells Nelson.	224	6	7.60
Thos Newcomb.	181	1	1.60
Wm Nelson.	221	5	7.60
Wm C Phillips.	63	5	7.60
Benjamin Starr.	223	1	1.60
Mrs Margaret Robie.	226	6	7.60

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of April, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Olney & Co., auctioneers, at Nos. 418 and 420 Clay street, San Francisco, California, on Monday, the seventeenth day of June, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. B. STEVENS, Secretary.  
Office, 418 and 420 Clay street, San Francisco. jel

## Lady Franklin Gold and Silver Mining Company—Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1867, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 305 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the second day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JO. S. LUTY, Secretary.  
Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. my4

## Mount Davidson Gold and Silver Mining Company, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office of the Company.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. PARDOU, Secretary.  
Office, 121 Sutter street, San Francisco, Cal. my25

## Nuestra Señora de Guadalupe Silver Mining Company, Tayoltita, San Dimas District, Durango, Mexico.

The public is herewith cautioned against buying or negotiating the following described Certificates of Stock in said Company, to wit: Issued to H. Bruenings, No. 96, 5 shares; to Wm. Gelmann, Nos. 105, 107 and 108, each 10 shares; and Nos. 55, 109, 110, 111, 112, 113, each 5 shares; to Chas. Schumacher, No. 47, 5 shares; and No. 61, 15 shares; and to La Abra Silver Mining Company (New York) No. 156, 550 shares, as said Stock has been sold for delinquent assessment (No. 25) at public auction, on Wednesday, May 15th, 1867.

F. J. PEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco. my18

## Nuestra Señora de Guadalupe Silver Mining Company. Location of Works: Tayoltita, San Dimas District, Durango, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of May, 1867, an assessment (No. 27) of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, E. J. PEIFFER, at his office, No. 210 Post street, or to the Treasurer, A. H. WILKINSON, at his office, No. 637 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the tenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

F. J. PEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco, Cal. my25

## Neagle &amp; Corcoran Gold and Silver Mining Company, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of May, 1867, an assessment of twenty-five (25c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 11, 333 Montgomery street, in the City and County of San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourteenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the first day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WILLIAM CORCORAN, President.  
A. P. ORRICK, Secretary. my18

Notice.—A meeting of the stockholders of the NEWTON COPPER MINING COMPANY, will be held at the office of the Company, at the mine, in the County of Amador, on TUESDAY, the eleventh day of June, A. D. 1867, at 3 o'clock P. M. By order of the Board of Trustees.

JABEZ NEWTON, Secretary.

April 30th, 1867. my14w

## Office of the Providence Mining Company—Notice.—The Annual Meeting of the stockholders of the above Company, for the purpose electing Trustees, and transacting other necessary business, will be held at the office of the Company, No. 5 Government House, San Francisco, on the TWENTY-THIRD DAY OF JUNE, 1867, at 2 o'clock P. M., of that day.

F. T. FOLSOM, President.

J. M. BUFFINGTON, Secretary.  
San Francisco, May 27, 1867. jeltd

## Rattlesnake Gold and Silver Mining Company, Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 318 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-seventh day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, up-stairs, San Francisco. m26

## Seaton Mining Company—Location of Works: Drytown, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of one hundred dollars per share was levied upon the capital stock of said Company, payable July 6th, 1867, in United States gold coin, to the Secretary, at his office, No. 60 Exchange Building, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOEL F. LIGHTNER, Secretary.  
Office, No. 60 Exchange Building, San Francisco. jel

## St. Louis Silver Mining Company, Cortez District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth (4th) day of May, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 331 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. my11

## Union Copper Mining Company, No. 2—Ledge or Claim situated in Copper Canon District, County of Calaveras, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Geo Hardy.	32	30 1/2	\$160.00
J M Byrne.	34	60	25.00
J M Byrne.	36	60	25.00
J M Byrne.	38	60	25.00
Richard Newby.	46	113	56.50
O K Stevenson.	41	10	75.00
O K Stevenson.	42	20	150.00
David Porter.	38	75	37.50
Geo Congdon.	26	25	12.50
A Pomier.	26	150	75.00
W B Chas. Gardner.	42	75	37.50
Ch C Orrell.	42	150	75.00
J Planet.	29	119	74.50
John T McLean.	not issued	112	66.00

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at No. 327 Montgomery street, San Francisco, California, on the tenth day of June, 1867, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GVE, TOUCHARD, Secretary.  
Office, No. 416 California street, San Francisco. my25

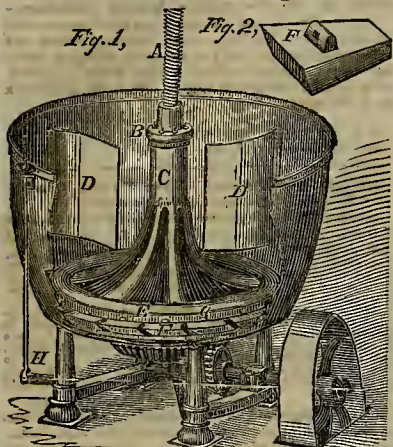
## Whidnatch Gold and Silver Mining Company, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Amount.
Allen, H. H.	13	20	\$300 00
Allen, H. H.	199	30	60 00
Camp, Jas.	139	6	90 00
Johnson, Geo H.	202	4	60 00
Satterlee, Wm H.	41	4	60 00
Thorn, Anna Key.	89	6	90 00
Williams, J. J.	201	32	480 00
Donne, V. G.	233	48	690 00
Jacob, S. W.	183	2	30 00
Drinkhouse, J. A.	246	1	15 00
Fassett, N. C.	237	1	15 00
Gray, Asa D.	247	1	15 00
Harrier, J. W.	244	20	300 00



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. It is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years' experience in mechanical operations, and may be addressed at San Francisco, or called on at the Millers' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

VARNEY'S  
PATENT AMALGAMATOR.  
These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

## This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Solders made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the **PACIFIC FOUNDRY,**  
141 San Francisco.

## FOR SALE!

PATENT RIGHT OF  
HUNT'S WINDMILL for the  
State of California or the whole  
Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right. This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

**E. O. HUNT,**  
28 SECOND STREET,  
11v24 San Francisco.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for. 1v143m

JAMES HITCHENS.

NELSON & DOBLE,  
AGENTS FOR

**Thomas Firth & Sons' Cast Steel, Files, Etc.,** Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

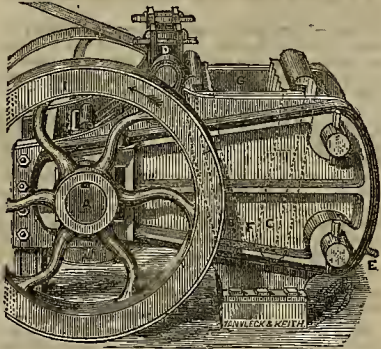
Mill Picks, Sledges, Hammers, Picks, Stone Cutters, Blacksmiths' and Horse-Shoers' Tools, 319 and 321 Pine Street, Between Montgomery and Sansome, San Francisco. 10v143r

SAN FRANCISCO BRUSH FACTORY,  
No. 211 California st., manufactures to order all kinds of  
**BRUSHES.**

At lower prices than cost of Eastern Importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fibers; also, Staloe Brushes from the same material. The Patent Rattan, Street, Stable, Fine and Plume Brushes, for which they have the exclusive right for the Pacific Coast.

All orders from the Interior promptly executed. **FELDMAN, SIMPSON & CO.,** Proprietors. 10v143r

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENTED IMPROVED QUARTZ CRUSHER.** The attention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, ore advertisers are enabled to offer these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600

No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....850

No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.** The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening. F, which can be regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne county:

**RAWHIDE RANCH, Tuolumne Co., Sept. 23, 1856.**

**JAMES BRODIE, Esq., San Francisco.** Dear Sir: I give you pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, **R. P. JOHNSON,** Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALCAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1854. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1856, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A drawing and full description of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1856.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1856.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street, San Francisco.

## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber lining, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at G.

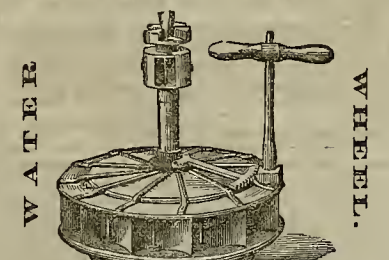
The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, are for sale by

**V. CUSHING,**  
130 Front street, San Francisco.

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

See illustration and description of this Pump, published every other week in this paper. 10v143r

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALLED IN THE United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REFERENCES.—E. Stoetion, Folsom; O. Simons, Oakland; (Mill at Clear Lake); Morgan Coville, Lexington; Santa Clara County; E. McMillan, Lexington; Santa Clara County. 23rd and Circular.

**KNAPP & GRANT,**  
Agents for California. 26v13-1yq 310 Washington street, San Francisco

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.  
**Giffard's Injectors,**  
For Feeding Boilers.

STODDART'S IRON WORKS,  
Beale Street, San Francisco.  
23v12 3m

## QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

## First Class Mill,

In all respects, with Pans and Separators complete. This Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or

**J. B. HITCHCOCK,**  
Millwright, Russ House.

## DUDGEON'S

## PATENT

## Hydraulic Lifting Jacks

## —AND—

## BOILER PUNCHES,

15v14 Eighth street, cor. Minna. gr

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

BY  
**WM. P. BLAKE,**

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast grinder and thorough Amalgamator; has double Millers, Rolling Shoes and reverse action. Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 G. W. STRONG, Assayer.

Notice to Miners,  
Well-Borers and Water Companies.

**M. PRAG** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing, etc.

**M. PRAG,**  
8v13-1y Stove Store, No. 125 Clay street, below Davis.

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

## PRICES REDUCED!

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new navy size, all 42 to 6 inch barrel; Rifle Games—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Game. All the new models for sale very low.

**ALBERT E. CRANE.**

## To the Mining Community.

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS' constant practice in supervising mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 551 Harrison street, San Francisco.

**WILLIAM WILLIAMS,**  
Practical Mining Engineer.

## HAYWARD, COLEMAN &amp; CO.,

IMPORTERS AND REFINERS

—OF—

Illuminating, Lubricating,  
—AND—  
PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO,—

## SPIRITS OF TURPENTINE &amp; ALCOHOL.

NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.

A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

## Lamps and Lamp Stock!

An elegant and complete assortment on hand. 3v13-3m19 414 Front street, San Francisco.

## GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.

SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes.

The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half the rates required to pay at hotels.

**SANBORN & CO**

**REESE RIVER ITEMS.**—The following items were this week crowded out from their regular place under the head of "Mining Summary":

From the *Reveille*, May 31st: B. Evans and T. J. Tennant, have located a fine ledge in Reveille Dist. They have taken out two tons, and intend to ship five tons to this city. The ledge is four feet thick a few feet below the surface, and is a compact body of uniform mineral.

An assay of the pulp of 5,493 pounds of ore from the Fisherman ledge, crushed at the Parrott mill, yielded \$382.93.

Julian & Clark, of the Bullion Co., are exhibiting thirty or forty specimens of ore, taken from various depths in their Fisherman ledge. Some of the richest pieces, showing plenty of horn silver, were so covered with lime debris as to resemble burnt bone. The ore presents great and marked variety, and appears to be a collection from a number of ledges, instead of one only.

The Fortuna ledge on Lander Hill, at a depth of 250 ft. has a width of from four to six in., containing a mass of highly concentrated ore, in which solid pieces of ruby are conspicuous. Several tons have been sent to the Empire mill for reduction.

From 27½ tons of ore from the Buel North Star, worked at the Keystone mill, bullion to the value of \$8,888.93 was produced.

The owners of the Consolidated Co. have been experimenting with wet crushing, but experience has taught them that the ores of this district cannot be successfully treated without roasting.

A coal vein is said to have been discovered somewhere down Reese River; samples have been exhibited, which have every appearance of good anthracite.

Silver Bend Reporter, June 1st: Grading at the Combination Co's works is progressing rapidly. The pipes for conducting the water from the spring to the reservoir are all on the ground. As soon as the pipes are all laid, mason work will be commenced on the foundation; 50 perch of stone are delivered daily; 500,000 brick will be required for the upper walls; 300,000 feet of lumber will be used in the construction of the mill.

May 30th: Four tons of ore from the Kalesed mine of Plymouth Co. reduced at the Parrott mill at Big Creek, and assayed by Boalt & Stetefeldt, yielded as follows: One-half ton first class ore yielded at the rate of \$2,108.36 per ton; 3¼ tons of second class ore yielded at the rate of \$280.53 per ton. The company is now sinking a vertical shaft, for the permanent development of the mine.

Upwards of 7,000 ozs. of crude bullion were brought into town from the Rigby mill, San Antonio Dist., from ore obtained from the Liberty mine, one of the oldest in the district, which has developed lately a better class of ore than ever before.

Trespass, May 28th: Mining has been resumed on the Sacramento claim, on Cedar Hill.

From the *Register*, June 1st: The Washington Mill and Mining Co. has resumed work on its mine in Echo District, under the superintendence of W. S. Sargent.

Midian Torrey has not yet started his mill, but will in a few days. Some castings which he ordered from San Francisco being detained on account of the snow, Mr. T. cut out his patterns and had his castings made in Virginia City. Mr. Torrey will be able to load all the teams for Humboldt and Idaho with back freight during the summer.

A much richer stratum of ore has been struck in the Liberty mine, San Antonio, than that heretofore mined. The Rigby mill has been constantly running upon ore from the Liberty for a number of weeks; the pulp assays have ranged at near \$300 per ton.

One ton and a half of ore from Reveille Dist. was last week worked at the Parrott mill at Big Creek, the pulp assay of which was \$891.

**A LECTURE ON FLYING.**—At a late meeting of the Royal Institution in London, Dr. Pettigrew delivered a lecture on the principles of support and progression in the air, as exemplified in the wings of birds and insects. He pointed out the importance of the screw movement, both as an instrument of support and progress. A certain amount of weight in the flying object was shown to be necessary to its hold on the air. Dr. Pettigrew has evidently great faith in the ultimate success of the attempt to devise an apparatus which shall not only maintain itself in the air, but move in a required direction.

A Lump of solid Montana silver, weighing seventy-three pounds, is on exhibition in St. Louis.



**THE INDUSTRIAL AND IMMIGRATION SOCIETY.**—The above Society met on Wednesday evening at the auction room of Messrs. Maurice Dore & Co. Gen. H. A. Cobb was elected President for the ensuing year. Thomas Mooney was elected Vice President and J. W. McKenzie, Secretary. The subscriptions to the stock were then commenced, and upwards of a thousand shares were taken. A resolution was adopted requesting Dr. Huddart to deliver a free lecture, at Platt's Hall, on the best method of promoting European immigration. A report of a plan of operations was presented by Dr. Pigné Dupuytren for future guidance of the Board. Dr. Dupuytren announced F. L. A. Pioche as taking 500 shares of stock and twenty-five additional shares monthly. Letters of co-operation were read by Gen. Cobb, from Cornelius De Boom, Esq., now a resident of Paris, offering hearty co-operation; also a letter to the same import from R. Hall, Esq., of Liverpool, a gentleman well known in this city, reporting a growing interest in the minds of immigrants in England in reference to the prospects that California offers to them. The business and prospects of this Society seem to swell to National dimensions, and there is a well founded hope now very generally entertained, that out of all the projects to aid immigration which have latterly been proposed, that a large accession to our population is morally certain in the immediate future.

**THE ELEVATION OF MINES.**—The silver mines of Kearsage are ten thousand feet above the level of the sea. The silvermines of Alpine county are from five to six thousand feet above the sea. The New Almaden quicksilver mines are one thousand feet above the sea. The mines on the Comstock are from five to six thousand feet above the sea. Reese river and Esmeralda mines are about seven thousand feet above the sea. The Idaho mines vary from three thousand to six thousand feet above the sea. The mines of Arizona are at various elevations, from three hundred to three thousand feet above the sea. Those on the banks of the Colorado are perhaps as near the level of the sea as any known. The following number of miners are given for California: Total number of white miners, 25,750; total number of Chinese, 20,300. Placer miners, 20,550; hydraulic miners, 5,850; silver miners, 13,000; copper miners, 2,700. So says J. Ross Browne.

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press; or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v14tf

#### EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

#### WOOD AND COAL,

No. 513 Bush street, between Dupont and Stockton  
1v14-6m SAN FRANCISCO.

#### WOODWARD'S GARDENS!

#### MUSEUM,

Art Galleries, Conservatories and Zoological Grounds,  
On Mission and Valencia streets, between Thirteenth and Fourteenth streets.

#### Open Every Day!

#### ADMISSION:

To all parts of the Garden.....25 Cents.  
Children, under 12 years of age.....Half Price.

NEW ATTRACTIONS are being constantly added to all departments.

These Gardens are accessible by the Howard, Folsom and Market Street Cars.  
Schools and Charitable Institutions, accompanied by guardians, free on Mondays and Fridays. 2v13qr

#### CUT NAILS.

#### 2,000 KEGS ASSORTED SIZES,

For sale in any quantity, to close Invoice, at the very

Lowest Rates, by

#### THOS. H. SELBY & CO.,

116 and 118 California Street,

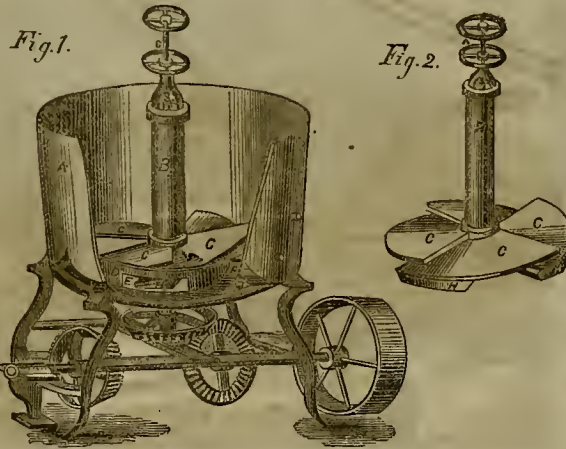
SAN FRANCISCO. 19v14 3m

**ISAAC LOBREE & CO.,**  
**GOLDEN STATE POTTERY,**  
ANTIOCH, CAL.  
Office in San Francisco, 516 Commercial st.  
Constantly on hand a large assortment of Earthenware,  
Fire Bricks, Fire Clay, and Stoneware.  
Is prepared to fulfill all orders at the shortest notice.  
20v14tf

## Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr



Stair Work of all Kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.

**N. P. LANGLAND,  
STAIR BUILDER.**  
No. 49 Beal street,  
Between Market and Mission,  
SAN FRANCISCO.  
10v14-ly

Newel Posts and Balusters  
CONSTANTLY  
On Hand and for Sale.



#### THE CELEBRATED Self Generating Portable Gas Lamp.

This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivalled, burning with undiminished brilliancy in a strong wind.

#### Directions for Use.

Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to generate the gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained until the whole of the contents of the reservoir is consumed.

A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back, but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.

When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.

Manufactured solely by JOHN J. HUCKS, original proprietor, Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State. 15v14-3m

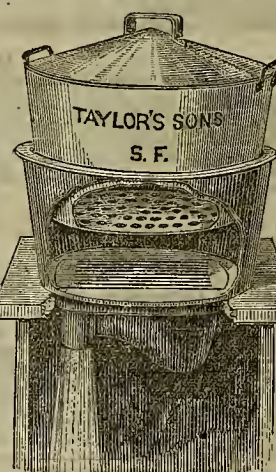
#### Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Ours and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McFARLANE & CO., Druggists and Chemists, 434 Sacramento street, opposite What Cheer House, San Francisco. 10v14-ly

#### Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

#### HEALTH! HEALTH!



#### Taylor's Stench Traps and Garbage Baskets,

And promote the health, comfort and cleanliness of your family. (For description see Mining and Scientific Press, April 6, 1887.) Sold wholesale and retail by TAYLOR & SONS, at No. 429 Pacific street, San Francisco. 15v14tf

#### California Steam Navigation

STEAMER CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Office of the Company, northeast corner of Front and Jackson streets.

JOHN BENCHLEY,  
President.

ELECTROTYPING CUTS, ENGRAVINGS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State.

## Portable Steam Engines!

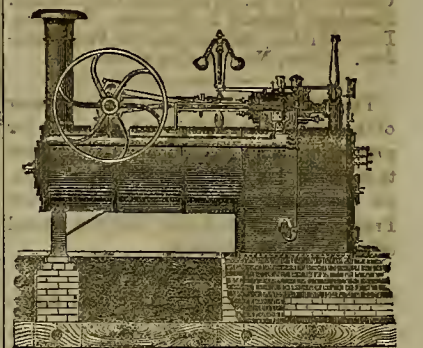
"Hoadley's" and "Hittinger's" Make,



#### HOADLEY'S.

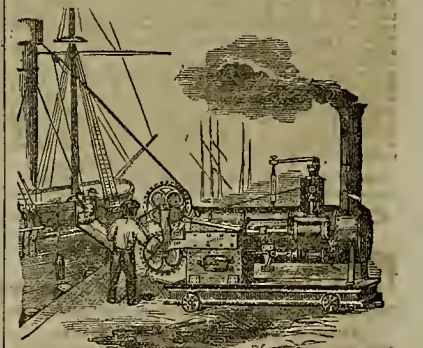
#### FOUR SIZES,

8, 10, 12, and 15-Horse Power,



#### HOADLEY'S.

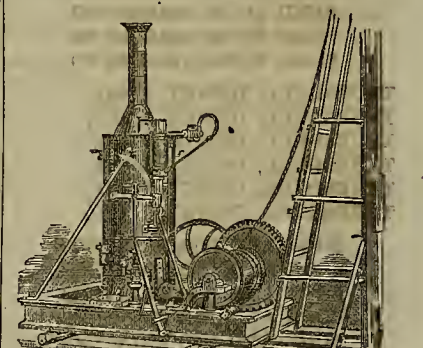
3 to 40-Horse Power.



#### HITTINGER'S.

#### THREE SIZES,

5, 7, and 10-Horse Power



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#### TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price. These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world. All sizes on hand from 3 to 30 horse power, with and without carriages. Also, Portable Saw and Grist Mills. For sale by TREADWELL & CO., Corner of Front and Market streets. 9v14-6m1p



## List of Officers of Corporations and Mining Companies.

[Below we give the date of recent meetings held in this city, and the names of officers chosen or appointed. Every bona fide company is invited to send us the result of their election, to be thus put on record, gratuitously, with any other facts of general interest.]

**CROWN POINT G. & S. M. Co.**—June 3d. Trustees: Thos. Sunderland, Thos. Bell, Wm. B. Johnston and A. Hayward. President, Thos. Sunderland; Secretary, Chas. E. Elliot; Treasurer, Thos. Bell; Superintendent, C. C. Batterman. Office, No. 708 Montgomery street.

**ENTERPRISE G. & S. M. Co.**—June 5th. Trustees: A. DeLand, E. B. Mott, Jr., Gen. John F. Miller, Hiram Pomeroy and Wm. B. May. President, A. DeLand; Secretary, Wm. B. May; Treasurer, E. B. Mott, Jr. Office, No. 5 Government Building.

**LYON M. & M. Co.**—June 6th.—Trustees: A. C. Teitman, W. H. Lyon, J. S. Kennedy, A. Walrath and W. N. Wade. President, A. C. Teitman; Secretary, J. M. Buffington; Treasurer, W. H. Lyon; Superintendent, J. S. Kennedy. Office, 5 Government Building.

**YOSEMITE CONS. M. Co.**—June 3d.—Trustees: R. L. Bampton, Peter Brandow, John Connor, Wm. K. Squires and Robt. Stuart. President, Richard L. Bampton; Secretary, David Wilder; Superintendent, Peter Brandow. Office, No. 529 Clay street.

**FRED ROHRER**, is the name of the inventor of the device described in our last issue, for preventing lamp explosions. In addition to securing his invention in this country, he has already applied for a patent for France, and will probably do so for several other European countries.

## Cholera—Perry Davis' Vegetable Pain Killer.

MR. PERRY DAVIS—Sirs—The benefits I have received from the use of your invaluable remedy, the Pain Killer, induces me to pen a word in its praise. Experience has convinced me that for Headache, Indigestion, Pain in the Stomach, or any part of the system, severe Chills, Weariness, common Colds, Hoarseness, Cholera, Cholera Morbus, Diarrhea, Dysentery, Toothache, etc., there is nothing better than the Pain Killer. I have this hour recovered from a severe attack of the Sick Headache, by using two teaspoonfuls, taken at thirty minutes interval, in a wine glass full of hot water. I am confident that through the blessing of God, it saved me from the cholera during the summer of 1865. Traveling amid dust, toil, change of diet, and constant exposure to an infected atmosphere, my system was daily predisposed to dysentery attacks, accompanied with pain, for which the Pain Killer was a sovereign remedy. One teaspoonful curing the worst case in an hour, or, at most, half a day! I have heard of many cases of Dysentery being cured by its use. Put in the teeth, it will stop the toothache. Gratitude, and a desire for its general use, has drawn from me this unsolicited testimonial in its favor.

D. F. TAYLOR, Jr., Minister of the Gospel.  
Sold by all Medicine Dealers everywhere. 22v14-1m

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They lead in all valuable improvements—all others follow.

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O. P. Truesdell, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 505 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.

TRUESDELL, DEWEY & CO.

San Francisco, April 16, 1867.

## HENDY'S LATEST IMPROVED CONCENTRATORS,

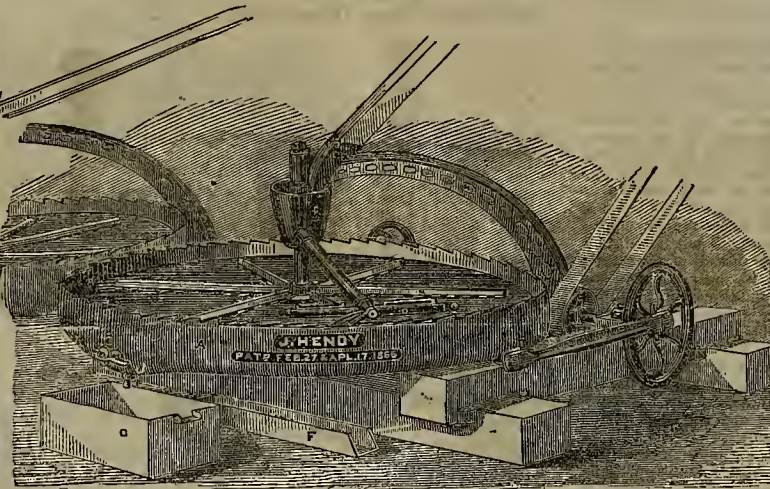


FIG. 1.

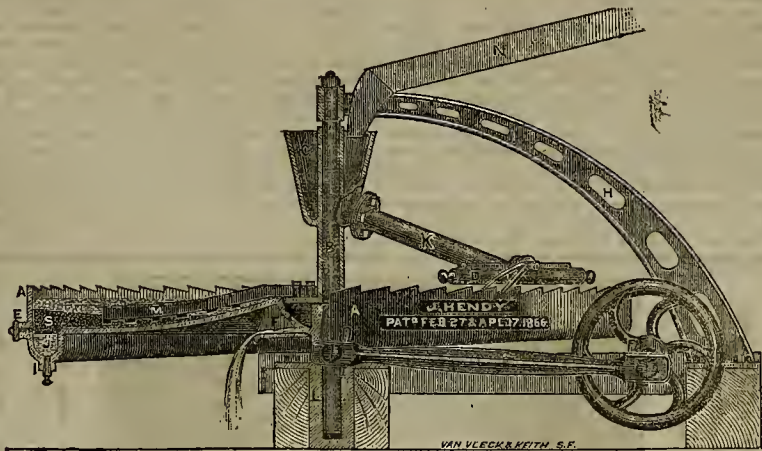


FIG. 2.

## FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

## Directions for Operating Hendy's Concentrators:

- The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
FIRST—Set the Pan, A, level, by its inner rim.  
SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

## References:

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:  
EMPIRE MILL.....Grass Valley, Nevada County.  
CONEY & BIGELOW MILL.....Jackson, Amador County.  
SPRING HILL MILL.....Amador, Amador County.  
GOLDEN GATE MILL.....Volcano, Amador County.  
OPHIR MILL.....Placer County.  
C. H. SCHNABE'S MILL.....Doty Flat, Placer County.  
GOLDEN RULE MILL.....Stewart Flat, Placer County.  
BENTON MILL.....Bear Valley, Mariposa County.  
LOUISIANA MILL.....Coulterville, Mariposa County.  
PEOPLE'S MILL.....Alleghany, Sierra County.  
TYRON & CO'S MILL.....Prescott, Arizona.  
WOOLSEY & CO'S MILL.....Prescott, Arizona.  
NOYES & CO'S MILL.....Prescott, Arizona.  
GUADALUPE & SACRAMENTO G. & S. M. CO.....Sinaloa, Mexico.

RECENTLY ORDERED FROM THE UNION IRON WORKS:

VEATCH, VALENTINE & CO., Commercial Mill (4 Concentrators).....Nevada County.  
GOULD & CURRY G. & S. M. CO. (4 Concentrators).....Virginia City, Nevada.  
VULTURE CO. (4 Concentrators).....Prescott, Arizona.  
MIDAS MILL CO. (4 Concentrators).....Virginia, Montana.  
PLYMOUTH ROCK MILL CO. (2 Concentrators).....Grass Valley.  
B. F. BROWN (1 Concentrator).....Melbourne, Australia.  
MOONY & SPERRY (1 Concentrator).....New York.

And in use in many other parts of this coast.

These Machines are made of iron, thoroughly constructed and ready for immediate use. For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

## Remarks:

Many Concentrators have been gotten up in this city. Some of these claim foreign origin; others are of home production. The sonorous Greek names, with which some of these have been dignified, ought, it would seem, to have entitled them to a better fate than that which has befallen them. A large proportion of these machines are now "numbered among the things that were." A few were still-born; never having had an existence except in the shape of advertisements and cuts, prematurely prepared by their too confident projectors. For one of these it was claimed, with a grand flourish of trumpets, that it had no "tilting-traps or other gimcracks, to be ever out of order or in the way." Unfortunately, however, although it had a reasonable supply of legs, it obstinately refused to run. Amputation failed to remedy the defect, and it now lies forgotten among a heap of old iron,—a mechanical abortion. J. H.

For further particulars, read article on Concentrators in the Circular of the Union Iron Works, for 1866, pages 51, 53.

## CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,

March, 1867.

Union or Fulton Foundry, San Francisco.

W. T. GARRATT,  
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BRASS AND BELL FOUNDER

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Manufacturer of Brass, Zinc, and Anti-Friction or Babbett Metal Castings;

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TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liquid, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZELS

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Highest Market price paid for OLD BELLS, COPPER AND BRASS. 67

## Foundry for Sale.

A One-half Interest in the  
UNION IRON WORKS,  
SACRAMENTO,

Owned by William R. Williams, is offered for sale on the most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 55 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.

Inquire at the office of the Foundry, or address  
WILLIAM R. WILLIAMS,  
26v13tr9-1cp Sacramento, Cal.

Pacific Mail Steamship Co's  
STEAMSHIPS FOR  
NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. at the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.

On the 10th, 19th and 30th of each month that has 31 days.

When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departures of 18th or 19th connect with French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America.

Departure of 10th connects with English steamer for Southampton and South America, and P. R. Co.'s steamer for Central America.

The following Steamships will be dispatched on dates as given below:

June 10th—CONSTITUTION.....Capt. W. F. Lapidge, Connecting with the RISING STAR, Capt. Gray.

June 18th—GOLDEN CITY.....Capt. Jas. T. Watkins, Connecting with ARIZONA, Capt. Harris.

June 29th—MONTANA.....Capt. Jos. Sutton, Connecting with OCEAN QUEEN, Capt. Maury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARGO & CO.

THE COLORADO will be dispatched July 4, at noon, and will be followed by the GREAT REPUBLIC, on August 24th, from wharf, corner of First and Brannan streets, for YOKOHAMA and HONGKONG, connecting at Yokohama with the steamer COSTA RICA for SHANGHAI.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.



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SAN FRANCISCO, SATURDAY, JUNE 15, 1867.

VOLUME XIV.  
Number 24.

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MINING SUMMARY—Embracing late intelligence from the various counties and districts in California, Colorado, Idaho, Montana, New Mexico, Nevada, Utah and Oregon.  
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## Hinkle & Capp's Centrifugal Ore Grinder and Amalgamator.

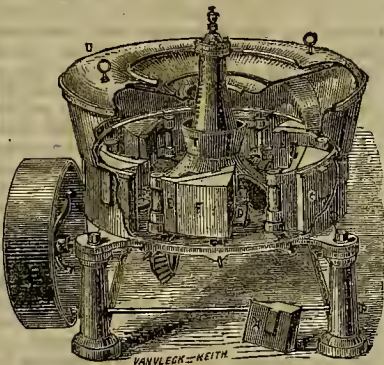
With this number of our paper we are enabled to present to our readers, as well worthy the careful examination of all practical miners and millmen, an illustration of Hinkle & Capp's new Centrifugal Ore Grinder and Amalgamator—a California invention of much promise. The patent is dated April 16th, 1867. While the principle made use of is quite novel in pans for grinding ores, its adaptation is considered strictly in accordance with acknowledged rules of mechanics, and the tests made seem to establish its successful application. In simplicity of construction, strength and durability of the parts, and general compactness, this machine shows superior excellence.

The following is a good description of the pan and its particular merits, given by the patentees:

In these pans the dead weight and drag of the usual upper plates bearing upon the surface of the cone or floor of the pan is entirely avoided, while a greater amount of actual work is accomplished with much less wear of iron by means of the centrifugal force generated by the revolution of the muller-arms or driver. The grinding is effected solely upon the perpendicular iron plates, G, which line the sides of the pan, by perpendicular mullers or shoes, F, thrown laterally against them when the arms are revolved. The hangers, E, which carry the muller plates, F, are hinged loosely, and play freely on pins near the ends of the driving arms, and also supported by having each a projecting lip, I, which rests on a bearing surface, D, on the arm which follows it. The muller plates are thus kept always parallel to the side plates or dies, G. The shape of the muller-hangers, E, is calculated so as to correspond with the curve of the grinding surface of the sides of the pan, and thus causes the muller plate or shoe, F, to wear in a parallel curve, and with less waste of iron than in any other form of grinding surface. The muller-plates or shoes and the side dies are therefore worn from top to bottom in a perfectly straight line, which remains true till they are worn out. As they are thinned by wear, weighting blocks are added at the back of the muller-hangers, one of which is shown at the foot of the pan. A top view of a part of the pan, showing the side dies, arms and muller-hangers and plates, supporting lips and bearing surfaces, is also given. The cover used in grinding and discharging continuously is also shown separately—that exhibited in the principal view being the one adapted for grinding

separate charges. It is an important result of this arrangement that the wear upon every portion of the grinding surfaces is uniform, the work being all done upon the circumference of a single circle, i.e. the sides of the pan. In every pan grinding upon the bottom of the pan or cone, the friction and wear of the iron is necessarily greatest at the outer edges of the plates where the circumference and motion is greatest. The surfaces are thus soon worn apart, so that the work done is lessened, and the friction towards the center, where the least can be accomplished, is greatly increased. This serious defect, to overcome which so many devices have been used in other pans, does not exist in this.

When the arms are revolved the muller-bangers and the muller-plates they carry are thrown out laterally and pressed against the side dies of the pan, the extent of pressure depending upon the speed attained, and the pulp is ground between the two. The peculiar shape of the muller plates causes the pulp to enter easily between them and the side dies, and the pressure there to be lightest and to increase towards the heel of the muller. Each muller being hung thus loosely, is able to yield and permit to pass by it any coarse pieces of quartz or ore, or obstructions, such as pick points or iron, etc., that may accidentally drop in. None of the other mullers, each being independent, is affected in such a case, but all are at liberty to perform their full share of work.



HINKLE & CAPP'S PATENT CENTRIFUGAL GRINDER AND AMALGAMATOR.

Practical mill men, accustomed to the use of grinding pans in which all the upper plates are fastened to one solid muller or driver, are aware of the trouble and delay and frequent strain or breakage caused by such obstructions. In this pan such an obstruction could readily pass by one muller after the other without interfering with the rest, and without danger of being jammed or doing injury; or falling upon the bottom of the pan, which is flat, could remain there, the arms leaving a clear space of an inch below them, while below the mullers, against the sides of the pan, in the mercury groove, the space is greater.

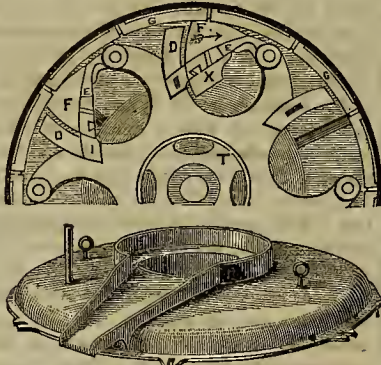
This pan is adapted either for working single batches or charges of silver ores or gold-bearing rock, or for grinding and discharging continuously the crushed rock as supplied directly from a battery—different shaped covers being used in the two cases. For grinding separate charges of ore the walls of the pan are made higher and flaring, as shown in the principal engraving, and the top either left open or supplied with a light wooden cover, or a cast iron cover, if desired, as drawn above. The form of this cover directs the current of the pulp into the center funnel, so that it again passes under the driver, across the bottom and between the mullers and side dies, until the grinding is completed. Around the circumference of the inner bottom of the pan, immediately below the mullers, is a deep groove for the reception of the mercury. This is divided into sections by cross partitions, so that little or no current of the mercury is created. Thus the mercury is not ground and cut up with the rock, which however passes over it and is acted upon by it, while the gold or silver in settling is caught and held by it. The top of the iron cover is provided with a groove, in which mercury is placed, over which the pulp passes on its return to the center.

While the proprietors of this patent are of the opinion that experience has shown that it is better not to seek to amalgamate in any pan in which

ore is ground, but to do so by slow, simple rubbing and stirring of the pulp in contact with mercury after the grinding is completed, yet, as it is often customary to amalgamate in such pans, they have made, as shown, ample provision for doing so in this when desired. In their pan, however, while the mercury is effectually brought into contact with all the pulp, it is yet completely protected so as not to be cut up and dissipated by being carried off in small particles. No trace of mercury has thus far been detected in the pulp in any of the trials made.

For grinding and discharging continuously, a simple convex iron cover is used, of the shape shown in the small figure, the pulp, as fast as ground, being discharged from the center and flowing off over the surface of the cover into a conducting trough which carries it away into the settlers or waste flume. The same provision is made for the use of mercury in this pan. It can readily be drawn off by plug-holes connecting with the lower groove.

These pans are being built at the Miners' Foundry, in this city. They are intended to work charges of 800 pounds each. Six mullers, weighing forty-four pounds each, are employed in each pan. They are intended to be run at a speed of from sixty to eighty revolutions per minute, according to the hardness of the ore or rock. The weight of each is about 3000 lbs., including an extra set of six mullers. The weight of the pan, as



arranged for grinding and discharging continually, is about 2700 lbs., which also includes an extra set of mullers. The price of either is \$500, with the extra set of mullers, completely fitted and ready to be set up and used.

The work done by this machine is accomplished thoroughly, rapidly, and with extreme regularity and evenness, whether the supply of pulverized rock fed to it is great or small. Scarcely any difference in the fineness of the pulp discharged is perceptible, and no coarse particles are to be found among it.

It will thoroughly grind (and amalgamate) a single batch or charge of 800 pounds of ore in from one-fourth to one-half less time than is required in the best of other pans. If arranged for continually discharging, it will receive without clogging all the crushed rock supplied directly by a battery of five stamps, with Nos. 4 or 5 screens, and thoroughly grind it to the same or a greater degree of fineness as now accomplished in the best pans hitherto made for the same purpose, and discharge it continually as fast as supplied, ready for any subsequent process of chlorination, amalgamation, or separation. When thus used, provision must be made for carrying off the slum and water, so that only a sufficient quantity enters the pan.

While in operation it moves smoothly and evenly, without strain upon any of the parts, and requires no attention except occasional oiling, as there is no regulation such as raising or lowering of the driver or mullers, required as in other pans; and if necessary, the mullers can be lifted out separately by hand as soon as the cover, if used, is lifted. It can therefore also be cleaned up by one man without any necessity for lifting the driving arms, which, when not in use, are easily turned by hand, there then being no friction. It also starts easily, there being no friction until the revolutions become speedy, when the mullers are thrown against the side dies. All these, as will be seen, are decided

advantages in its favor over those possessed by other pans.

It is claimed for this pan that it is neater, lighter, simpler in its construction, and therefore less liable to be broken or disordered, and consequently cheaper, than any other grinding pan yet used. Also, that it will do more work, and do it more thoroughly and in less time, with the same power required for any other pan used and claimed to be of the same capacity.

These pans, as originally made, were also supplied with upper mullers secured to the arms, to grind, in the usual manner, upon bottom plates. But it was found that these were wholly unnecessary, as the side mullers do more work, more rapidly, and of better quality, with vastly less power alone, when omitting the grinding on the bottom altogether. As now made, the arms and the mullers play entirely clear of the bottom, leaving an open free passage for the pulp from the center to the sides, and the whole work is done by the centrifugal force of the mullers against the sides. It will, therefore, work coarser rock than can be used in many other pans, and is thus adapted to use in cement claims and for prospecting where facilities for thorough crushing do not exist. For this purpose, a smaller and cheaper pan will shortly be manufactured.

In addition to the above statement, the proprietors say they desire nothing more than that their pans shall be fairly tested, and, where possible, in competition with other pans claiming similar or greater capacity, as their merits will thus be demonstrated and become known. They are willing to sell them on condition that they shall be fairly tried and prove to be capable of doing all that is claimed for them, or returned. Our own examination of them when in operation has satisfied us that they are a highly useful and meritorious invention, and likely to be largely adopted by practical mill men. Practical mechanics who have seen them are pleased with their plan of construction and work.

One of these pans is now at work at the European Metallurgical Works, on Bryant street, between Third and Fourth streets, in this city, where it may be inspected at any time and seen in operation by all interested. We advise all interested in mining and milling operations to examine it, and persons erecting new mills, or about to purchase such machinery, will find it to their interest to see this invention.

Any further information, for the present, may be obtained of the proprietors, Messrs. Philip Hinkle and Charles S. Capp, No. 543 Clay street, San Francisco, to whom letters may be addressed, or of S. P. Kimball, Esq., at the European Metallurgical Works above mentioned, where the pan may be seen in operation, or at the Miners' Foundry, First, near Folsom street.

THE OAKLAND COLLEGE SCHOOL EXHIBITIONS, held on the evenings of the 12th and 13th insts., in the College School hall, were in every way creditable to that institution. Great proficiency was shown in recitations in German, French and Spanish, and considerable musical ability displayed in performances upon the piano, and by the brass band. When called upon to do so, the students can represent in language, and with perfect accent, nine different nationalities. Without going further into detail, it is sufficient to say that the most perfect satisfaction was given in the closing exercises of this school, and we have no hesitation in recommending it to the attention of the citizens of the Pacific coast generally.



## Communications.

In this DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 359.]

## IN PARK CANON

Is situated a lode which bids fair to rival the Murphy. This district was discovered in 1865, subsequent to the occupation of Ophir Cañon by the Murphy party. A fine mill is in progress of construction here. Unlike the Murphy mill, it stands below the mine, at the mouth of the cañon, thus obviating the expense of hauling the material for its construction, and its future supply of fuel, up the steep grade, while it will not be difficult to run the ore down. The next place claiming our attention is Kingston, in

## BUNKER HILL DISTRICT,

Which is located eighteen miles north of Park Cañon and twenty-five miles directly south of Austin. Two mills were erected here in 1865-6, one originally designed to be run by water power, of which there is an abundance in the cañon. Here again we find a district cursed by the prevalent folly of the years above named; that is, the building of mills in advance of the opening of the mines. Wherever this has occurred, miners have become discouraged and invariably neglected their mines for the following reasons: Capitalists always shun mining districts where idle mills stand; again, if the mills have not been closed by the sheriff, they are kept so by the owners, for it does not pay to start up for a week or so on occasional small lots of ore, to again lie idle for months; lastly, and the principal reason is, that such a thing as concert of action between mill and mine owners never existed within my experience, and probably never will. These interests, which should be identical, are too often antagonistic. Without discussing the causes for such a state of feeling (which are evident enough to old miners), the odium generally rests on the millmen.

Slate is the predominating country rock of this section, and the ores abound in black oxide of copper, but are invariably rich in silver. Fifteen miles further north brings us to the little deserted town of Geneva, in

## SMOKY VALLEY DISTRICT.

This was one of the early located districts of Reese River, which is now, to all appearances, neglected, and a fit parallel to its neighbor, Big Creek, on the opposite side of the range. Nowhere on our trip have we found so dismal and dreary a camp as this little hamlet of Geneva, with its houses already crumbling to ruin. On a visit to this place, in October last, I noticed a single individual at work near the mouth of a tunnel on the south side of the cañon. That was the only evidence of life seen in all the district. Whatever may have been his prospects and success, I cannot say; but he certainly deserved a full share of the latter. Geneva is rather a pleasant situation, at the mouth of Birch Creek Cañon. Birch creek is one of the largest streams that flows from the Toiyabe, affording, at this point, abundant water-power for mills. Its borders are everywhere fringed with willow and birch of small growth. Higher up towards the summit the cañon widens out into meadows of considerable extent, some of which have been enclosed for hay ranches, while the whole region affords excellent range for stock.

Of the mines here, I know nothing. All we can observe from the trail are granite walls, rising abruptly in places to a great height—granite everywhere till we have ascended the cañon four miles; then the formation appears to be basaltic, with an occurrence of frequent quartzose dikes, trending northeasterly.

Since writing the above, I notice an article in a recent number of the Reese River Reveille in relation to this district, which I copy in the absence of any personal knowledge of the mines: "The Commercial Com-

pany is steadily pushing its tunnel into the hillside. It is now about four hundred feet long, and it is calculated that the ledge will be reached in another hundred feet. At present, the Commercial is the only company at work in the district; but the prospects are good for general activity during the coming summer."

Six miles from Geneva we reach the summit of the Toiyabe Range, and are four miles south of Austin. In this vicinity some of the highest peaks are covered with basaltic boulders, similar to those that cover the upper Sierras in California, except that they are probably not water-washed.

Our next visit will be to the range of mountains lying east of Smoky Valley, where, in this and the ranges further east, the recent astonishing developments in the lodes being worked, and the almost daily discovery of others that challenge credulity, is drawing the attention of the whole country.

[To be continued.]

LACOUR'S BITTERS appear to be having a decided "run." Although it is but one month since they made their first appearance "pro bono publico," they have nevertheless found their way into quite universal use in this city and vicinity. They are termed "sarsaparilla," or sarsaparilla-bearing bitters.

The value of sarsaparilla (*smilax* of the botanists) was made known to the medical world three centuries ago; but, through ignorance, its virtues soon became to be disputed, and this important product of the vegetable kingdom was for more than 200 years nearly lost to mankind. The intelligence of the present century, however, has again brought it forward, and in the light of modern science it has now assumed an importance in *materia medica* from which it can never be again deposed. Some idea of the rapid increase of its use within the past twenty-five years may be inferred from the fact that between 1842 and 1849—our latest dates at hand—its export from Central America increased from 5,500 pounds to about 120,000 pounds. Its present export is enormous, while the demand is constantly increasing. It is put before the public, in various forms, as a tonic and blood-purifier. In the shape presented in Lacour's Bitters, it is associated with a number of other medicinal roots and herbs, healthy and beneficial in their tonic effects upon the bowels. The best evidence of the value of these bitters is their great and increasing popularity. Another matter, which Californians should always bear in mind, is the fact that they are *home made*—the bottles, the corks and the hitters are all made in this city, and under the immediate supervision of the gentleman whose name they bear. As an invigorating and strengthening tonic they are pronounced inferior to none—as a home manufacture, they should always be preferred to any imported article.

RAMS vs. GUNS.—Some of the ablest military engineers of the day have expressed the opinion that the most effective naval guns of the future will be steamships used as "rams"—that steam, instead of powder, will be employed as the motive force which is to hurl the tremendous bolts of war engines against the ribs of an enemy. The time will soon come when nothing less than "thunder mountains" (Dunderbergs) will be considered fit for modern Titans to launch at one another in their ocean fights.

A HINT FOR CALIFORNIANS.—In the vineyards upon the Rhine, the grapevines are kept low and as near the soil as possible, so that the heat of the sun may be reflected back from the ground. By this means the ripening is carried on after the sun has disappeared, by radiated heat. Vines trained upon brick walls, with a southern exposure, would be similarly benefited.

A MAN was lately struck by lightning while alone in a field in Indiana. He was entirely divested of his clothing, even to his boots. When found, about an hour afterwards, he was yet alive, but without hope of recovery.

## Facts About Patent Matters.

NUMBER TWO.

## THE OBJECT AND OPERATION OF PATENT LAWS.

The first object of patent laws is to stimulate invention—but that only as a means for accomplishing the still greater and main object of benefiting the public. The power to make such laws, and the object for making them, is clearly set forth in article 1st, section 8, of the constitution, which provides that "Congress shall have power to promote the progress of science and useful arts by securing, for limited times, to authors and inventors the exclusive right to their respective writings and discoveries." Also, "to make all necessary laws for carrying into execution the foregoing powers." The prime object is to benefit the public by stimulating invention, so as to increase, to the fullest possible extent, those inventions or improvements which may be useful or beneficial to any or all classes of the community in the various industrial processes of life. It is thus a most noble object—one well worthy the profound study and attention of all wise legislators—worthy of far more attention that it has yet received in that direction.

## INVENTION IS A NOBLE PURSUIT.

None more so. Its entire object and result is to benefit mankind, by decreasing his labors, increasing his products, multiplying his enjoyments, and giving him more time in which to cultivate his mental faculties, thus enabling him to live a higher and nobler life—in other words, to become more a man and less an animal—hence, to be more a freeman and less a slave to that toil rendered necessary by the wants of his animal life. Its triumphs are not only noble, but preëminently peaceful. Its path is strewn with peace and plenty, instead of war and famine. Instead of ravaged domains, plundered cities, broken and mourning households, the path of its victories is strewn with smiling fields, flourishing and opulent marts, joyous homes, and blessings innumerable. The plowshare, and not the sword, is the emblem of its attendant deity. The noblest hero of history's proudest page never achieved triumphs equal to those of the modern inventor. No act of military hero can compare with his in its grand, noble results, save where, as in our recent war, the sword is drawn to preserve a nation, that it may enjoy, increase and perpetuate the peaceful blessings of invention. In all ages and all countries, inventors or discoverers have ranked among the most valuable citizens of the State. The number and the appreciation of this class of men have greatly increased of late years, and no country has furnished more of them than our own. This is partly owing to the peculiarities which have shaped our individual and national character—partly to the greater freedom of thought and action, coupled with the more general diffusion of education among the masses, and still more to the liberal policy of our patent laws, which not only acts as a stimulant, but places all upon a perfect equality—the poorest and lowliest enjoying the same privileges as the wealthiest.

It has been said that he was a public benefactor who caused two blades of grass to grow where but one grew before. What, then, shall be said of the man who, by his invention, enables one to perform the labor of a hundred, thus increasing a hundred fold the products of his labor? Surely, in the highest sense of the term, he is a benefactor.

## WHY A PATENT IS GRANTED.

As before stated, the object is to benefit the public by stimulating invention. If a person had no assurance that he should have the benefit of his invention—if any one who might choose should be allowed to adopt and use it at pleasure, of course there would be very little inducement for him to spend time or money in perfecting it; or, if perfected, it would be for his interest to hide it from the public as long as possible. But, being assured of the full and exclusive enjoyment of all profit to be derived from the manufacture and sale of it for fourteen (now seventeen) years, he is thereby induced to perfect and bring it before the public as soon as possible; and to do that sometimes requires much skill, labor and money.

But this monopoly to the inventor is granted upon certain conditions: First—that he complies with the requirements of the law, by taking the steps therein specified to secure his right—the most important of which is, that in making his application, he shall give so full and clear a description of his invention that any person skilled in the art to which it pertains shall be enabled to understand and construct it. The object of this requirement is, that when his patent expires, the public may know how to make

and use his invention, and thus have the full benefit of it. Thus the patent is issued to him upon an implied contract; and if he fails to comply on his part, by suppressing any essential fact or feature, or by misrepresenting his invention, so as to make it appear that it possesses functions that it has not, then his patent will be void.

The second condition is, that he shall not have abandoned it to the public before making his application. He may abandon it in several ways—by himself using it in public, especially if accompanied by any statement on his part indicating that he intends to give the public the benefit of it, or by permitting others to use it. This does not, however, prevent him from allowing a friend to use it as a neighborly kindness, or for the purpose of testing its operation. Neither does it prevent him from using it in public, if done solely as an experiment.

If a party completes an invention, and neglects, for two years or more, to take any steps to secure a patent, and another party makes the same invention in the meantime, the first party will lose his right to a patent, and the patent will issue to the second party. This is upon the ground that the first party has lost his right by his own neglect to comply with the law, and make his application.

The protection of a patent is given only upon the condition that he gives the public the benefit of his invention. If he neglects or refuses to do that, and some one else does it in the meantime, the second party who has invented it and proceeded at once to give it to the public by applying for a patent, is the one to whom the patent will issue. It is an old saying, that "a person cannot eat his bread and butter and sell it too;" so a man cannot hide his invention and patent it too. If he will not give the public the benefit of it, then the public is under no obligation to give him a monopoly of it; and he has no reason to complain of this, for, if by his neglect or selfishness, he defeats the object of the law, then surely he has no right to claim the benefit of the law.

While the law scrupulously protects him while experimenting or completing his invention, at the same time it requires of him "reasonable diligence" in making his application; and the courts having repeatedly decided that two years was a sufficient length of time for him, that has come to be adopted as the rule; and the law of 1861 provides that if an applicant neglects for two years to complete his case for examination, after having filed his petition, then it shall be considered as abandoned. All this, however, with the exception of the last mentioned provision of the law of 1861, has relation to cases where a second party makes the same invention and applies for it, the first inventor having neglected for two years to do so. In cases where two parties are busy on the same invention at the same time, unknown to each other, he is entitled to the patent who first made the invention, even though the other completes his machine or model first, and first makes his application. Where but one party makes an invention, he may delay as long as he pleases, to apply for a patent, though of course at the risk of losing it entirely by some other person inventing the same thing and applying for a patent on it in the meantime, as above explained. The only safe rule, therefore, is for the inventor to make his application as soon as possible after completing his invention. And if it is a matter that is likely to consume much time in its completion, then he should protect himself by filing a caveat. This last is simply a brief description of the proposed invention and its operation, accompanied with a drawing exhibiting the nature of the thing, and setting forth what the party intends to claim as his invention. It need not be so full and specific as a specification (as the description in the application is called), but should be sufficiently so that the examiner may comprehend what the invention is. The fee for filing a caveat is \$10. It is filed in the secret archives, lasts for one year, and may be renewed annually upon the payment of the \$10, as long as the party desires; but it must not be allowed to run out for a single hour—if so, all before that time becomes dead, even though the fee be paid immediately thereafter.—W. E. Dodge, in *Prairie Farmer*.

The oldest house in the United States now standing as it was originally built, is the Rev. Dr. Whitegeld's, at Guilford, Connecticut. It was built in 1639. The walls are of stone and the wood work is of oak. The diamond-shaped windows were removed some sixty or seventy years ago, but in other respects the venerable mansion remains in its original state. The elevation of the first story is seven feet and eight inches; the height of the second is six feet and nine inches.



## Mechanical.

## Russian Leather—How it is Made.

The artisans of no other nation than Russia have yet been able to produce an article of "Russian leather" or "Russian iron," which equals, in quality, that which is sent out from the Russian workshops. These inimitable products have long been a puzzle to the people of all other nations. The skill which the Russians have acquired in the production of these useful and durable articles is both honorable and remarkable. Why it is that, with all the skill and inquisitiveness of the Englishman and Yankee, the secret of the Russian success has never been obtained, we will not stop to inquire; but certain it is that the tanners and iron-workers of other nations have not been lacking in their efforts to extract the secret or emulate the product.

The power which the Russian leather possesses of resisting decay in damp places, and its freedom from the attacks of insects and fungi, are remarkable. Persons have repeatedly been there to investigate the process, and returned with the full assurance that they had possessed themselves of the coveted secret; but when the process of manipulation is followed out anywhere else, as closely as observation, under most favorable circumstances, seems to assure them is done there, an inferior quality of leather is always produced. The Russians must either possess some natural advantages, of which they are not themselves aware, or their secret must be a very simple one, and easily concealed.

This leather is prepared mostly from the skins of calves, sheep and goats, although heavy beef skins are sometimes used. The process has been again and again minutely described and in detail. The fullest which we have seen is found in the *Scientific American* of the 25th ult. We have before us pretty much the same thing, but less in detail, which was published some eight or ten years since, and which reads as follows:

It is prepared by tanning the skins of calves, sheep and goats, with a warm decoction of willow bark; the red dye is communicated by a decoction of red sanders wood, and afterward applying by a kind of enrrying process on empyreumatic oil, obtained by distillation from the bark of the birch tree, which gives it its agreeable odor. The hair is said to be loosened by a weak solution of wood-ash lye, of which the active principle is carbonate of potash.

The paper first alluded to pertinently asks if there may not be some special virtue in the Russian vegetable products employed in the process.

**SPEED OF LOCOMOTIVES.**—Fifty-three miles in forty-seven minutes, is said by the *American Artisan* to be the best time ever made by a locomotive for any considerable distance. If our memory serves us right, an English express train once ran about the same distance or greater, at the rate of a mile a minute. Short distances have often been run at the rate of eighty miles an hour; and one hundred miles an hour have been claimed—the evidence of such speed having been obtained is doubtful. It is well known that when great speed is attained, the locomotive bounds, rather than runs along the track—it bounds from every inequality, sometimes making leaps of many feet, without touching the rail at all! The danger from such a motion, after passing the speed of sixty miles an hour, is very great.

**A SINGULAR MODE OF PROPULSION,** by means of a wheel picking up a submerged cable, fast at both ends, is a very old device. There are said to be a number of steam ferries worked on this principle in England up to the present day. This is also said to have been probably the manner in which steam ferries were first worked. The modern device of making the steam the propelling power, probably originated from this idea.

It is stated that 5,600 reaping and mowing machines have been made at Rockford, Illinois, during the past winter.

**HEAVY FORGINGS.**—Several very heavy and unique forgings are on exhibition at the Paris Exposition. The Haswell patent press-forgings, made in Vienna, are exhibited in the Austrian department, including a locomotive cross-head squeezed out of a solid block of wrought iron, even the opening for the connecting rod being pressed in. A locomotive crank, pressed at one operation, is also shown. A very large compressed forging, by Marrel Freres, is a 30-ton marine shaft with three cranks, all forged solid in their positions, instead of being forged in one plane and then twisted, as is usual. Sixty tons of iron were used in forging this shaft, one half the metal being wasted in the process. The piling was done in layers crossing each other at right angles or diagonally.

**WELDING IRON AND STEEL.**—Mr. Bernard Lietaer, of Brussels, gives the following as "An improved method of welding iron upon iron, steel upon steel, and iron upon steel":

One kilogramme of filings of iron or steel; 100 grammes salt of ammoniac; sixty grammes of borax; fifty grammes of balsam of copayva; calcine the whole and reduce to fine powder. For an ordinary solder one of the pieces of iron or steel is heated to a red heat, and after the part to be soldered has been carefully cleaned with a file or wire brush, the above composition is spread upon it, and the second piece at a white heat is immediately placed upon it and welded together. Provisional protection has been secured for this invention.

**THE PHILOSOPHY OF ANNEALING IRON.**—Annealed iron may generally be distinguished by its neutral tint. The application of carbon without oxygen, at a white heat, appears to act like a sponge; drawing to the surface and absorbing into itself the chief part of the carbon in the cast iron submitted to the operation. The withdrawal of this impurity changes the iron so treated from a crystallized to a fibrous structure, so that it becomes more or less malleable. Cast iron car wheels are so treated by several manufacturers, to render them tough.

**TIN CLIPPINGS** of late have become too valuable to be thrown away as has been their common fate. By immersing them in stone tanks (or probably in large wooden tanks) for twelve hours in a mixture of half water and muriatic acid with six per cent. of nitric acid, or as long as a dry and ignited slip shows no tin on the surface, then, after drawing the acid liquor, washed thoroughly with water, and after drying used as old wrought iron in puddling. The tin is removed from the acid solution by precipitation with metallic zinc, and the spongy precipitate after draining mixed with some oil or fat, and melted down.

**STEEL BOILERS.**—The Paris and Orleans railroad has thirteen locomotives with steel boilers—the Southern has fifteen, and the Paris and Secaux has a number. The substitution of steel for iron in this direction is making rapid progress, notwithstanding the doubts as to its utility and economy, which have been put forth by several eminent English engineers.

**THE ELASTICITY OF IRON.**—Tredgold says that the destruction of the elastic power of iron manifests itself when the load exceeds one-third of its breaking weight; but Hodgkinson and others claim that such an effect is produced, and a permanent "set" is often established when the load does not exceed one-sixteenth of the breaking weight.

**PREVENTION OF FIRE.**—Houses, it is asserted, may be made almost entirely fire-proof by filling up the space between the walls and under the stairs with lime and finely broken bricks or gravel. In France they use plaster of paris and broken stone. Mud and brickbats will in fact answer every purpose. The greatest cause of destructive fires is the draught produced by these hollow spaces.

**STRENGTH IN FORM.**—Although cast iron columns are usually made of a regular taper from base to top, still the strongest form for such supports, consistent with a given weight of metal, is that of a double cone, making them thickest in the middle.

## Scientific Miscellany.

**MOVEMENT OF SOUND.**—It is stated in the English papers that Mr. Mallet has ascertained, from observations made during some recent blasting operations at Holyhead, that the louder the report the more rapid was the progress of sound through the air. With 2,000 pounds of powder, the sound of the report traveled at the rate of 967 feet in a second; while with a charge of 12,000 pounds, the sound traveled at the increased rate of 1,210 feet. Absolute precision in such observations is very difficult. The books tell us that sound travels at the rate of 1,142 feet a second. Owing to the difficulty of accurate observations, no two observers could probably arrive at precisely the same result. Whatever the rate may be, it is doubtless constant under the same atmospheric conditions. With the wind blowing toward the observer, the speed would be greater than with the wind blowing from him, or during a calm, as the sound-waves would themselves be carried along by the current, in the former case. Again, the speed would vary with the greater or less density of the atmosphere. An atmosphere loaded with vapor would transmit sound more rapidly than a light, dry atmosphere. Hence, the probability is that the variations in Mr. Mallet's observations are due to some of the causes named, and that the theory hitherto received, of the constancy of sound, under similar conditions, is still to be received as correct philosophy.

**FORCE OF HEAT BY EXPANSION.**—It has recently been ascertained that a bar of malleable iron of one inch sectional area is stretched one ten-thousandth of its length by the pull of a ton weight. It has also been ascertained that a similar elongation is produced by heating the bar 16°. The same bar may be contracted one ten-thousandth of its length either by cooling 16° or by a pressure of a ton weight. Such experiments show how enormous are these silent forces, and how irresistible and terrible they must be against the feeble strength of man. Yet it is so ordered in nature that they act only a beneficent part. The gentle wind, the refreshing rain, the changes of seasons and the flow of rivers, are only a few of the many natural phenomena which are dependent upon the force of expansion by heat.

**CARBONIC ACID BATHS.**—At Piermont in Germany, there is a natural spring of carbonic acid gas, the sides of which have been walled up, and steps have been laid for entering it. The well is shallow, and the gas fills it to a depth of about four feet, so that the gas rises about to the middle of a person standing in the well. Carbonic acid, in contact with the skin, produces a peculiar prickling sensation, and people visit Piermont for the purpose of taking a carbonic acid bath. The keeper makes a practice of blowing soap bubbles, which fall through the air, but which rest upon the surface of the heavier gas, and dance up and down as the gas is agitated.—*Exchange.*

There is a spring of the same kind at the New Almaden Quicksilver mines in this State, walled and plankd up, with steps leading down into it. Whether it is ever used as a bath or not, we do not know; but it might be.

**A NEW ALLOY** has been introduced in Paris, under the name *Turo-argent*, or trisilver. It is composed of 33 per cent. silver, 25 to 30 per cent. of nickel, and 37 to 52 of copper. The compound is not homogeneous, but is rendered malleable by a secret process. In color it is similar to platinum, takes a high polish, is extremely hard, and is not affected by exposure to the atmosphere.

**DR. RICHARDSON** states that iodine, placed in a box with a perforated lid, destroys organic poison in rooms. In case of small pox he has seen the method used with great benefit.

**THE PHILOSOPHY OF THE PREVENTION OF BOILER INCORUSTATION BY ELECTRICITY.**—At a late meeting of the Polytechnic Association of the American Institute, at New York, Prof. Van der Weyde explained the action of electricity in preventing boiler incrustation in the following manner:

He had found by experiments, that deposits in steam boilers are positively electrified. This he had ascertained by having an isolated wire attached to a metallic plate—receiving deposits upon this plate—then connecting it with an electrometer which indicated positive electricity, and when positive electricity was discharged from this metallic plate into the liquid by some proper means the deposit or crystallization was effectually prevented. If, therefore, the positive electricity of the steam was conducted to the bottom of the boilers it would repel the deposits. Then all that is necessary is to collect upon the shell of the boiler this positive electricity, so that it can discharge into the water at every place where the boiler is in contact with the water. His plan is to place in the state-room or steam-drum of the boiler a number of downward pointed lightning rods with their base ends forming a metallic connection with the boiler. These points will absorb the positive electricity of the steam, communicate it to the shell of the boiler, from whence it will naturally discharge in the water, wherever the boiler is in contact with the water, and everywhere repel the electro-positive deposits, so that these are continually prevented from settling and are kept in suspension in the water, and from time to time may be blown off.

The relative moisture in the air of a room may be very correctly arrived at by the simple expedient of placing a few grains of quicklime on a plate and exposing it upon a table. If it does not absorb more than one-fortieth of its weight of moisture, the room is not over damp for health. In a damp, newly plastered room, it will sometimes absorb one-twentieth of its original weight.

**EFFECTS OF PRESSURE ON FREEZING WATER.**—M. Mousson has discovered the interesting fact, that a powerful pressure not only retards the freezing of water, but prevents its complete solidification. The pressure opposes the tendency of the water to expand on freezing, and thus virtually lowers the point of solidification.

**ALLOYS OF STEEL WITH PLATINUM** are said to be very perfect in every proportion that has been tried. The best proportion for edge instruments is about one-fifth per cent. of the latter metal. Equal parts by weight form a beautiful alloy which takes a fine polish and does not tarnish; the color is the finest imaginable for a mirror.

**OIL OF IRON.**—When cast iron is dissolved in dilute sulphuric acid, a peculiar oil is also formed. This substance has long been a puzzle to chemists. Chevreul, the French chemist, has stated that perhaps nitrogen was a constituent of this oil, but late investigations by Professor Cameron, of Dublin, and Emerson J. Reynolds, of London, have conclusively settled the question as to its identical character. It contains no nitrogen; it is chiefly composed of carbon and hydrogen.

**THE AIR TREATMENT.**—M. Boisson has introduced a method of treating superficial wounds by a jet of air from the common bellows, immediately forming a dry film over the exposed flesh, beneath which healing is greatly facilitated and other obvious advantages secured. Burns which have removed the skin may be treated advantageously in this way.

**HON. M. P. WILDER**, of Massachusetts, has discovered that pencil marks on strips of zinc for tree labels, which can readily be rubbed off when first written, grow more distinct and durable with age, and after a few years can only be erased by scraping.

All kinds of soft, porous stone become hard by white-washing them with fresh-slacked lime. The lime absorbs carbonic acid from the atmosphere, and is converted into carbonate of lime. A portion of this remains in the pores of the stone, and ultimately becomes marble.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

64,534.—AMALGAMATOR.—Andrew Hunter, San Francisco, Cal.:

I claim, 1st, The box, A, with sides and ends lined with copper, in combination with the blocks, B, B, and sides, C, C, substantially as described.

2d, The frame, E, with shoes or mullers, D, D, suspended to frame, F, by rods or bars, G, G, or their equivalents, worked by rod, J, and crank or eccentric, K, as hereinbefore set forth.

3d, The movable frame, F, with adjusting screws, I, I, or their equivalents, for adjusting mullers, D, D, to any desired height.

4th, Covering the tops of the mullers, D, D, with copper.

5th, Box, L, with frame, M, set with skimmers and agitators, substantially as described and for uses and purposes as hereinbefore set forth.

6th, Table, O, with steps covered with copper plates, with side vibratory motion as given by driver, P, and rod, Q.

7th, The box, A, lined with copper plates in combination with blocks, B, B, dies, C, C, mullers, D, D, adjusting or movable frame, F, screws, I, I, rod, J, crank or eccentric, K, box, L, and frame, M, with agitators or skimmers, substantially as described and for the uses and purposes as hereinbefore set forth.

8th, The last described combination in connection with the table, O, with its side vibratory motion, substantially as described and for the uses and purposes as hereinbefore set forth.

64,554.—FRICTION PAWL.—Joseph Moore, San Francisco, Cal.:

I claim a stop apparatus for hoisting machinery, constructed with the pawls, Q, Q, moving with the shaft, F, and the ratchet-case, R, turning loosely upon said shaft, together with the brake-beam, L, L, levers, T and V, and weight, Z, constructed and operated substantially as and for the purposes described.

The nature of this invention is a device for the use of a friction-clutch and pawl in connection with a hoisting gear, in order to guard against accidents, and so constructed that the hoisting wheel may be turned easily in a direction to raise the weight; while by means of pawls inside of the ratchet-case and frictional brake-beams the load may be stopped at any desired point with perfect security and safety.

64,558.—IMPROVED POT FOR MELTING GLASS. Carlton Newman, San Francisco, Cal.:

1st, I claim a pot, A, constructed with the opening, F, and flues, D, D, or their equivalents, substantially as and for the purposes described.

2d, The flues, H, H, or their equivalents, constructed and arranged substantially as and for the purpose described.

The nature of this invention is to provide a pot for melting glass, which combines the qualities of a covered pot for making superior glass with those of an open pot for making inferior glass quickly. A full description of the character and merits of this invention was given on page 280 of the present volume of the Press.

64,762.—AN IMPROVED ANCHOR STOCK.—John Lake Hanly, San Francisco, Cal.:

I claim an anchor stock, C, in combination with the permanent flange, e, and movable key, D, substantially as and for the purpose herein set forth.

The object of this invention is to provide an improved anchor-stock, to obviate the evil of breaking off at the point where the key passes through to secure the shank. In order to accomplish this, the inventor makes a key-way in one side of the opening of the shank, through which the stock passes, and welds on the stock a flange, at such a distance from the shoulder as to let the stock turn after the flange has passed entirely through. By turning the stock one-fourth or more of the circumference a key-way through the shoulder is brought in a line with the one in the shank, so that a key may be inserted to keep the shank and stock in their relative positions.

64,781.—LOW WATER INDICATOR.—George McAllister, San Francisco, assignor to himself and Chas. B. White, of the same place:

I claim a water gauge, composed of the float, J, arms, I, parts or case, A, B and C, and passages, D, D, constructed substantially as and for the purposes described.

This invention relates to an improvement in that class of gauges designed to indicate the level of the water in steam boilers, and consists of a hollow steam-tight case, composed of a central hub, the space enclosed by two radial lines extending from this hub to the circumference of a circle of the proper size for the index or scale. Within this case is an arm moving about an axis in the center of the hub, and having at its outer extremity a hollow float. An indicator is placed on the end of the axis, outside, and corresponds with the position of the float on the inside. Steam and water are admitted to the case by pipes connecting with the steam and water space in the boilers, so that the position of the float, and consequently the height of the water, is easily ascertained at a glance.

## RECENT INVENTIONS.

ANOTHER SAN FRANCISCO INVENTION IN NEW YORK.—The New York *Shipping List* speaks as follows of a new boat detaching apparatus: "Among the multiplicity of inventions designed to save life at sea in time of disaster, we have seen nothing more meritorious than the 'Boat Detaching Apparatus,' invented by Messrs. Peterson & Gunner, of San Francisco, the same parties who lately exhibited the 'Patent Self Reefer and Furler' in this city. The great advantage of their detaching apparatus, now being examined and tested by the Life Saving Commission, is its great simplicity and the small amount of space it occupies in the stern of the boat. The boat can be detached instantaneously by raising a small lever, the person occupying a seat in the stern not being obliged to move from his position, thus obviating confusion among the passengers in times of peril. This apparatus has the endorsement of the eminent ship-builder, Henry Steers, and other practical men, which is the best recommendation of its general worth and utility."

A VERY simple machine has been recently devised, which consists of a rotary fan drawing a powerful current of air through a case or chamber packed with sponges, which may, if desired, be saturated with any purifying, ozonizing, or freezing mixture, and thus a cool, fresh, or, if you please, perfumed breeze may be enjoyed in any situation and at any season.

NEW ELEVATOR.—The *Colorado Times* speaks of having seen the model of a newly-invented elevator for the mines, which the editor thinks might be valuable; but he gives no intimation of the principle on which it is constructed.

A CYPHERING MACHINE.—Samuel J. Kelso, of Detroit, Mich., has invented a machine which can be used for adding, subtracting and multiplying figures of any desired magnitude, with the greatest ease and facility.

A CITIZEN of Troy, New York, is at work on a pasteboard shell boat, which will weigh less than forty pounds, and be perfectly impervious to water, by a new chemical preparation invented by its maker.

A NEW CORKSCREW AND CORK.—M. Gusselt, the great champagne wine maker in France, has invented a new style of cork and corkscrew, by which a glass of champagne can be taken from a bottle without injuring the remaining contents. Thus this perishable wine can henceforth be enjoyed in a small quantity without the waste of a whole bottle.

NEW INCORPORATIONS.—Articles of Incorporation have recently been filed in the County Clerk's office in this city as follows:

June 8th.—Consolidated Virginia M. Co. Comstock Lode, Virginia City, Nev. Capital stock, \$2,320,000; 1,160 shares, \$2,000 each. Trustees: Wm. E. Barron, Frank Livingston, L. Sloss, A. P. Crittenden and S. Heydenfeldt.

June 5th.—North Pacific Fur Co., to trade in the country and islands of the North Pacific. Capital stock, \$1,000,000; 100 shares. Trustees: Lloyd Tevis, J. Mora Moss, L. L. Robinson, W. C. Barron and S. F. Butterworth.

ELECTION.—SHOSHONE S. M. Co.—June 12th. Trustees: Henry Carlton, Jr., S. R. Harris, H. W. Cleaveland, S. A. Chapin and David Wilder. President, Henry Carlton, Jr.; Secretary and Treasurer, David Wilder; Superintendent, M. J. Goodfellow. Office, 529 Clay street.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board.

SAN FRANCISCO, SATURDAY MORNING, }  
JUNE 15, 1867.

## CITY STOCKS.

We note a little more activity in City Shares; however, the offerings exceed the demand. Sales of North Beach and Mission R. R. were effected at \$50 per share. The usual monthly dividend of  $\frac{1}{2}$  cent. on its capital stock is payable to-day. Spring Valley Water Co. sold at \$66.50 per share. On and after the 10th inst., this company disbursed its usual monthly dividend of  $\frac{1}{2}$  cent. California Steam Nav. Co. realized 63 cent., seller 30, and Fireman's Fund Insurance Co. obtained 93 cent., or \$9.30 per share. The usual monthly dividend of the Bank of California (1 cent. on its capital stock of \$5,000,000) is payable to-day. Private sales of Front Street, Mission and Ocean R. R. have been made at \$15 per share. Up to the 1st inst., 9,000 shares have been issued out of the 10,000 shares of which the company is composed. We quote Omnibus R. R. at 59 bid and 60 asked. The usual dividend of  $\frac{1}{2}$  cent. is payable to-day. The South San Francisco Railroad and Homestead Association pay a dividend of \$200 per share to-day, the same being earnings from premiums paid on lots at a recent sale.

## MINING SHARE MARKET.

The very decided upward tendency of Mining Shares during the past week is a sufficient explanation of the increased productiveness of the Comstock lode, and though most shares may be somewhat higher than their intrinsic value, we may safely look for a continuance of the present activity. The sales have been larger than ever before, and it is exceedingly gratifying that "wildcat," as in former times, is no feature whatever of the market.

SAVAGE—has been sold at a marked advance since our last reference, opening at \$3,800, rapidly improving to \$4,500, and closing yesterday at \$4,500. During the week ending June 8th, 1,918 tons of ore were taken from the mine, showing an estimated value of \$86,062, or \$44.82 per ton. A recent exploring drift eastward from the north mine, at a distance of 72 feet from the main body, unexpectedly reached a new body of ore which was found to be twelve feet in width, and of a fine quality. The best informed say that unless this is a continuation of the old North Potosi chimney, (and it is far from being underneath that ore), it must be an entirely new body of ore, untouched from any other point. Under all circumstances, it is reported that enough ore has already been developed to warrant the assertion that it is the most important discovery made within a year. The position of this drift, in point of level, is midway between the sixth and seventh levels, and preparations are now being made to explore this newly discovered body of ore from both of these levels, and also to ascertain how far it extends toward the south. We learn that the southwest drift on the third level is in rich ore. The receipts of bullion in the month of May amounted to \$408,000, leaving a surplus of \$110,000 after the payment of the last dividend, amounting to \$160,000. HALE & NORCROSS—has been offered at \$3,300. We learn of no material change in this mine. On the 7th inst., the shaft was down 430 feet.

YELLOW JACKET—has been sold at greatly improved figures, and exhibits considerable firmness at the close, opening at \$1,800, advancing to \$2,030, and closing at \$2,000. We are informed that the developments in the lower levels of this mine are very flattering, particularly in the north mine.

CROWN POINT—also shows a material advance over closing sales of last week, improving from \$1,680 to \$1,900, and closing yesterday at \$1,975. The ore raised from the mine during the week ending June 7th, amounted to 611 tons, 526 tons of which came from the 400-foot level, and 85 tons from the 500-foot level. The developments on the east vein, 500-foot level, extend north and south some 60 feet. In a southerly direction the vein maintains its former width, but in going north it has a tendency to grow narrower. A winze has recently been started on this body of ore. The west drift in the same level is in 165 feet, and running in hard rock. The shaft is now 84 feet in depth

from the 500-foot station. The average product of the mine is about 90 tons per day.

GOULD & CURRY—suddenly took an upward tendency, but declined as rapidly, advancing from \$540 to \$850, dropping to \$600, then selling at \$650, and at the close obtaining \$680. The appreciation of this stock early in the week was principally based upon the developments made in the Savage mine, at a point about 200 feet south of the Gould & Curry line, and on the 600-foot level.

CHOLLAR-POTOSI—has been in rather less favor, declining from \$540 to \$465, rallying to \$500, receding to \$470, and closing at \$480. The Blue Wing level is said to look well, both in the "raise" and at the south end, and it is thought that the ore in this level will not be exhausted for months to come. In the third or Santa Fé level, little has been done during the past week, and we have nothing new to report. Owing to the hardness of the rock, the sinking of the shaft progresses slowly. During the week ending June 8th, 2,870 tons of ore were shipped to custom mills. A typographical error in our last issue made the assay value of the ore recently found east of the Chollar timbers \$13 per ton instead of \$73. A dividend of \$25 per share is payable to-day.

KENTUCK—exhibited considerable activity, at enhanced rates, during the week under review, opening at \$455@475, then selling at \$450, ex-dividend, advancing to \$500, seller 3, and closing at \$545. The bullion returns from the 1st to the 11th instant aggregated \$22,832.17. From a very full report of the present condition of this mine, made by C. A. Luckhart, mining engineer, May 29th, 1867, we obtain the following statement of the amount of ore at present in sight:

Ret. 1st and 3d stations...	2,700 tons, which will mill	\$30 00
Ret. 1st and 3d stations...	3,500 "	" " 45 00
Above first station.....	20,000 "	" " 32 00
Below third station.....	17,500 "	" " 35 00
Below third station.....	5,000 "	" " 45 00
Below third station.....	6,400 "	" " 37 00

Making a total of.....55,100 tons, which will mill \$57 87

BELCHER—also shows a very decided improvement, gradually advancing from \$400 per foot to \$490, and closing yesterday at \$545. OREER has been largely dealt in, at fluctuating rates, advancing from \$270, seller 3, to \$360, falling to \$320, rallying to \$350, receding to \$325, and closing at \$325.

OVERMAN—during the past week has been the most active on the list, over 2,000 shares having changed hands, rising rapidly from \$135 to \$240, and closing yesterday at \$260. By telegraphic dispatches, we learn that two shipments of bullion have been made to the office in this city, the first amounting to \$3,300, being the product of 75 tons of ore, equal to \$44 per ton, and the second, \$5,800, being a partial clean-up of 115 tons, showing a yield of \$50 to the ton. It is said that they are now obtaining an abundance of ore, and in all probability will pay a dividend next month.

IMPERIAL—has been sold at a considerable decline, gradually receding from \$197.50 to \$185, rallying to \$190, and at the close selling at \$205, b. 3. The first clean-up of the Rock Point mill for the current month aggregated about \$13,000 in bullion. A dividend of \$10 per share is payable to-day.

EMPIRE—has been in slight request, selling at \$160@163. The receipts of bullion during the month of May amounted to \$21,933. They raise, on an average, 1,500 tons of ore per month, and reduce about 1,000 tons in a like period. Two feet of ALPHA sold at \$400 per foot. We quote GOLD HILL Q. M. & M. Co. at \$160 bid. A dividend of \$10 per share is payable to-day.

CONFIDENCE—rose from \$55 to \$77.50, and closed yesterday at \$77.50. BULLION declined from \$48 to \$36, rallied to \$39, and at the close sold at \$50. An assessment of \$10 per share was levied on the 4th inst. DANEX receded from \$29 to \$22. SIERRA NEVADA sold within a range of \$10@13, and closed yesterday at \$10. EXCHEQUER closed at \$11.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,725,032.

THE AMERICAN NATURALIST.—We have received two or three numbers of this valuable monthly, published by the Essex Institute, of Salem, Mass. It is full of useful matter, beautifully printed, and illustrated with very superior engravings. It numbers among its contributors the most eminent naturalists of the country, and fills a vacuum in the list of American scientific publications, which it is to be hoped will never be again neglected.

## ORE CONCENTRATOR FOR AUSTRALIA.—

One of Hendy's patent concentrators, was forwarded by the last steamer for Australia, via Panama.



Copies of the Act of Congress, approved July 26th, 1866, relating to the Location of Mineral Lands, together with the instructions to the "United States Registers and Receivers and Surveyors General," from the Commissioner of the General Land Office Department of the Interior, dated at Washington, Jan. 14th, 1867, can be had at this office. Also a full set of blanks for making applications, advertising, etc. Address DEVER & Co., office Mining and Scientific Press, San Francisco.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

From the *Miner*, June 1st: The Mowyer Co., since the first 100 ft. of tunnel made, have encountered extremely hard rock, which somewhat discourages stockholders, though there are symptoms of a near approach to the ledge or soft rock.

The timbers for the Tarshish ore house are ready to raise.

The Ringgold & Goldfinch Co. are now in quartz running from the west wall. Some of the quartz looks extremely well. The rock is very hard, and but slow progress is made.

June 8th: Charley Mauk, a stockholder in the Buckeye No. 2, Silver Mountain, recently took to Virginia City, Nevada, a specimen of the Buckeye, which assayed, gold and silver, \$300 per ton.

This week, the workmen on the Mowyer struck through into a softer strata, through which water comes in large quantities from some fountain-head, supposed to be the ledge. An old millman from Virginia City visited Alpine, this week, and, after examining the mines and ores, states that, with good management, the mills could be made to pay well.

The Jennings lode is being worked. The location consists of 600 ft., and is thought to be identical with the Oconto claim.

The workmen in the Balaklava tunnel have struck a vein of ore about eight in. thick, which resembles the Morning Star.

The Pennsylvania Co. have resumed operations.

## Butte County.

From the *Oroville Record*, June 1st: C. M. Ury has some specimens of valuable looking quartz taken from a ledge in Lincoln Dist., Mountain Spring Township. The ledge was discovered about a year since, and has prospected as high as 10 cts. per lb. A shaft has been sunk some 30 ft., the vein widening at the top from 18 in. to three ft.

G. W. Taylor has commenced piping in his claims at Gravel range. It is working four men at present, but will have another set of hands soon. C. Houghtailing and P. P. Stoker are working the claim of D. Chapland. This claim has been worked for several years, and still pays well. Further up, toward Willow creek, on what is called China Gulch, are several companies hard at it. The gold is coarse, and sometimes pays well. A company of Chiuamen took out over \$10,000 from this gulch within the last two years. Geo. McDougal and Jim Downs are working here, besides a number of others. The snow is very deep here yet—from 5 to 20 ft.—but is going very fast.

At Kellogg's diggings there are only two men at present. On Bear Gulch there are two or three companies from the Green Isle, busy sluicing. Sky High diggings, once so famous, seem about played out. The Mammoth ledge, owned by Joel Spitzer & Moore, is from 8 to 12 ft. wide on top. The owners talk of sinking a shaft 100 ft. deep and testing it thoroughly.

## Calaveras County.

There is quite an excitement at Copperopolis over the discovery of a rich quartz vein, which prospects from \$50 to \$60 per ton all the way through.

The owners of the Finnegan mine, at Carson Hill, have struck a rich pocket, said to contain from \$80,000 to \$100,000 in gold, and have, in addition, a well-defined quartz vein, which yields well.

## El Dorado County.

Placerville *Courier*, June 8th: Rich rock is being taken from the Shepherd mine, some pieces containing over a pound of gold. From the proceeds of 125 tons of rock, a mill has been erected, and the mine thoroughly opened.

## Inyo County.

Charles F. Derval writes from Independence, Inyo Co., to the Nevada *Trepass*, May 7th: The shipment from this camp last week amounted to 68 lbs., with only four furnaces of small caliber to work with. There is a gold ledge  $2\frac{1}{2}$  miles from here, which is worked by an arastra. It pays from \$100 to \$300 per ton. The gold is worth \$18.60 per ounce. I sent a man to locate both extensions, in case the indications are as good as in the original, and it will pay from the top. There is plenty of water, etc. This is the richest mineral section on the coast.

The *Trepass* adds: Three hundred lbs. of ore from the San Felipe produced  $38\frac{1}{2}$  ozs. of silver; 200 lbs. from the Mexican produced  $40\frac{1}{2}$  ozs. of silver; 300 lbs. from the Republican produced 48 ozs. of silver. The

same amount from the San Judas produced 104 ozs. of silver, and 75 lbs. from the same ledge, No. 1, yielded 136 ozs.

## Nevada County.

*Transcript*, June 8th: Some six or eight ledges are being worked in the vicinity of Eureka, with excellent prospects. Three mills are in operation, and it is probable that two or three new ones will be erected before fall. Booth & Co's mill is at work crushing rock from the Liberty ledge. This lead is from two to ten ft. wide, and yields from \$20 to \$22 per ton, the latter being the amount obtained at the last working. The claim has been prospected 90 ft. in length, and the rock looks first rate.

Black & Co. have a fine ledge. The mill is kept in constant operation, and the rock yields handsomely.

Considerable prospecting for quartz is being done between Eureka and Moore's Flat. The Chico Co. have taken out 1,000 lbs. of rock, which has been shipped to this city, to be worked at Palmer's mill. The Grizzly Co. are going to erect a new mill. Several other companies are prospecting.

There is a prospect that a large amount of bullion will be obtained from the ledges in this section of the county before fall.

*Gazette*, June 6th: Murphy & Co., of the Homestake, Myers' Ravine, are hauling rock to Palmer's mill, which will be crushed in a few days. The rock looks well, being highly charged with sulphurets, and containing considerable free gold. They have out some 30 or 40 tons, and the ledge where they are now working is between three and four feet wide. Not long since an interest in the ledge was sold at the rate of \$12,000 for the whole.

A mining company at Omega are making arrangements to use nitro-glycerine in blasting. It is claimed that it has three times the explosive force of powder, pound for pound.

J. T. Stratton, who has been appointed to survey quartz mines in Nevada county, under the law of 1866, commenced, on Wednesday last, by surveying the claims of Dewey & Co., at Newtown.

*National*, June 5th: The Dromedary ledge is still exhibiting fine indications. This morning rock was taken out which showed an abundance of free gold and sulphurets.

*Excelsior*.—*Transcript*, June 1st: A large number of ledges are being worked in the Meadow Lake Dist., and the prospects never looked better. The deeper the ledges are worked, the better they appear. A. L. Stiles has commenced suit against the Enterprise Gold and Silver Mining Co., of Meadow Lake Dist., to compel the officers of the company to issue to him 225 shares of stock, which he purchased of J. S. Battersby.

Meadow Lake *Sun*, June 6th: The Excelsior Co. are remodeling the old works of their mill. They are now getting out some fine rock, in which free gold may be seen with the naked eye.

## Placer County.

Auburn *Stars and Stripes*, June 5th: The work on the Washoe claims is being done midway between Bath and Michigan Bluffs, directly opposite Mt. Gregory. These ledges are four ft. thick, all have been prospected quite extensively, and in no case has a less yield than \$28 per ton been realized. The narrowest ledge is  $3\frac{1}{2}$  ft. thick. By working test, the rock from this ledge yields \$300 per ton. Several lumps crushed in a hand mortar, and washed with great care, yielded extremely rich prospects.

As Superintendent for Goddard & Co., of San Francisco, who lately purchased the Washington mine at Smith's Point, Mr. John Tregloan has erected a 10-stamp mill on those claims, which has been in active operation for several weeks with every indication of remunerative results.

The Westchester, owned by Gen. McDowell, B. M. Hartshorn, W. H. Sears, and others, is having a 10-stamp mill erected, to be run by water power, and will be ready to run this month.

Five tons of quartz taken from a vein running through Yankee Jim, was crushed last week, and yielded a sufficient amount per ton to warrant the further development of the vein, which is eight ft. wide (carrying gold bearing sulphurets), in a good locality for cheap and permanent working.

*Enquirer*, June 8th: James Taef and Collector Miller have purchased interests in the Redstone, Champion and Blue Bell.

From the Grass Valley *Union*, June 5th: At Dutch Flat last week, Carr, Moore & Harriman, after a 19 days' run, during which time only four men were working in their claim, near Gold Run, cleaned up \$2,720. The Home Ticket Co., also near Gold Run, obtained \$2,068. The Harkness claim, located near Cañon Creek, cleaned up on Wednesday, after a run of 23 days, realizing the handsome sum of \$4,250.65.

## Plumas County.

*National*, June 1st: Prime and others have discovered good placer diggings on the north side of Genesee Valley. The first two days' ground sluicing paid \$4 to the hand. They are now digging a ditch so as to work the ground to better advantage.

The Pennsylvania quartzmill, near Greenville, owned by Mr. Judkins, was put in operation on Monday last. The mill has lain idle about nine months, pending litigation.

The claims of Reynolds & Madden at Black Hawk, are now paying as high as a dollar to the pan. The claims of Rice & Co. are yielding very rich returns. It is expected that a large amount of money will be taken from these claims this season.

Light & Bro., at Genesee Valley, have completed their new mill, and started it in operation last week. We expect soon to hear of a big clean-up, as they have a large amount of good quartz on hand.

The new mill of Judkins & Kellogg, Round Valley, is ready for operation, and will commence crushing a large amount of quartz, which has accumulated.

Thomas Conley has sold his interest in the New York Co's claims, at Sawpit Flat, to Robert Oliver, for \$3,400.

The Eagle Co's claims are paying largely.

*Quincy Union*, June 1st: About two weeks since, Messrs. Bolyer McDougal & Co., who are at work on French Ravine, near Rich Bar, found a small slug of gold in their ground sluice, which weighed  $56\frac{1}{2}$  ozs., valued at nearly \$1,000.

*National*, June 8th: David Haun, while working in the claim of Burge, Simmons & Co., on Mill Creek, picked up a specimen of gold weighing seven ozs.

The Pennsylvania mill has been purchased by H. C. Bidwell for \$5,000. He intends moving it to the Caledonia ledge immediately.

Mr. Westcott is engaged in moving a mill, formerly owned by J. D. Compton, Round Valley, to the Kitts ledge, which has lately been purchased by a New York company through their agent (Mr. Westcott).

Kellogg & Judkins have a number of men employed on a ditch, which is to carry water from the reservoir to this mill.

## Sierra County.

Mountain *Messenger*, June 6th: Rich quartz has been struck in Gibson Creek. Several companies have been organized for the purpose of prospecting certain ledges believed to be rich. A new town has lately been surveyed off in the vicinity of the famous Von Humboldt quartz mines.

## Solano County.

Vallejo *Recorder*, June 8th: The mines now working and shipping coal, are the Black Diamond, Union, Pittsburg, Independent and Eureka.

The Mount Hope Co. have a mine open in the vicinity of the Black Diamond, and are preparing to take out coal largely.

The Central and Teutonia Cos. are not at work at present.

## Tulare County.

The Visalia correspondent of the *Times* of this city says: On Tule river, several copper leads are being opened and prospected. But little is being done in the way of mining at Havilah, although several rich ledges have lately been discovered. A specimen of decayed quartz from a new ledge showed particles of finely divided gold. The discoverer of the ledge has refused \$18,000, and asks \$30,000 for the claim.

## Tulolumne County.

The Sonora correspondent writing to the *Alta*, June 2d, says: The Supt. of the Davidson mine has advertised for proposals to sink 20 or more feet in the shaft, for running 20 ft. in the Tulolumne drift, etc., specifying a dozen different shafts, drifts, stopes, etc.

The total yield of the Sophia mine has been \$45,000.

The Nonpareil mine is filled with water, and is standing idle. The vein is five ft. wide, and the ore worked from \$13 to \$40 per ton. The sulphurets are abundant, and contain from \$40 to \$150 per ton.

The Burns mine is paying well. The company intend to add five more stamps.

The average yield of the Golden Rule mine is from \$10 to \$12 per ton. The vein is eight ft. thick, and easily worked.

*Sonora Herald*, June 1st: The Laurel mill, 11 miles from this place, was destroyed by fire on Tuesday night last. It was the work of an incendiary.

## COLORADO.

From the *News* of May 22d: H. C. Justice has made a sale of 19 silver lodes, located at Argentine, to a Cleveland Co. for \$30,000.

An assay of ore from the Watertown lode, Georgetown Dist., shows a yield of silver of \$4,110.75. The lode is situated near the Anglo Saxon, and is owned by Anderson, Rogers and others.

*Times*, 21st: An assay of 250 lbs. third

quality Adeline ore, Central Dist., run in Phelps' terrace furnace, yielded at the rate of \$21.60 per ton. From  $3\frac{1}{2}$  cords of gold bearing quartz, taken out of John Wendel's claim, No. 1 east on the Gunnell lode, Enreka Dist., at a depth of 140 ft. there was taken 58 ozs. and  $14\frac{1}{2}$  pwts. of gold retorted, worth in currency, \$1,232. It was run in Wendel's mill. The East Boston lode is a vast excavation 16 by 10 ft. and 140 ft. deep. The lower wall is well defined from the top, and the upper one has but just come in, so that there is a space of 10 ft. between walls, with iron pyrites mixed throughout the entire mass. Some of the ore resembles the Gunnell in appearance. There is a rich streak of black pyrites about half way down, which is apparently a cross lode.

From the Marysville *Appeal*, June 7th: The Colorado gold ores are to be attacked by the Welshmen. A large lot of these difficult sulphureted ores have been taken out to Wales and there reduced with such success that capital has been raised to bring out Welsh smelters and put up extensive works on the successful plan in Colorado.

## IDAHO.

From the *World*, May 27th: Miners at Beaver Creek and Walker Camp, at Gold Hill, are making \$20 per day to the hand. A clean-up, after a two weeks run at the Elkhorn mill, on 160 tons of their ore, yielded 690 ozs. retorted gold, valued at \$15 per oz., \$10,350.

May 29th: The tunnel in the Hayes & Ray ledge of 400 ft. is completed. The company have rented the Lincoln mill.

The difficulties over the ownership and possession of the celebrated Poorman mine of Owyhee, have been settled, and the mine and property have gone into the hands of the new company which takes the place of the New York and Owyhee Mining Co. The company have purchased the Empire ledge, which crosses the Poorman.

The Grey Eagle ledge, lately discovered in Yuba Dist., has created much excitement. So far as developed it is the largest and richest silver ledge ever found. A tunnel has been pierced 140 ft.; at 120 ft. the ledge was struck. To the tunnel, a shaft of 140 ft. has been sunk, and the ledge was dug into eight ft. and yet its full width had not been reached. Assays of the ore have yielded from \$2,000 to \$3,000 per ton. Ore containing above 60 per cent. of the pure metal had been taken from the ledge. It is beyond question, the most extraordinary silver ledge ever yet discovered, and seems destined to cast even the famously rich Poorman mine of Owyhee into the shade.

Lewiston *Journal*, May 18th: Coleridge & Co. at Gnat Creek, took out last week \$328. The King quartz mine from 65 tons, cleaned up \$2,600. Their tunnel is in 325 feet.

May 25th: Expressman Fettes has arrived from Pierce City, bringing with him 200 ozs. of gold dust, making \$12,000 this season from that camp.

Companies at Gold Creek, Palouse, are taking out \$6 to \$7 to the hand. The gold is coarse and does not have the appearance of having been washed much. It is the opinion that there must be a rich quartz lead in the vicinity.

From the Owyhee *Avalanche*, June 1st: The tunnel of the Poorman is 800 ft. in length, and its intersection with the South Poorman shaft is 250 ft. below the surface.

Work on the Silver Monarch ledge has been recommenced. A shaft is down 25 ft. A vein of quartz is shown two ft. in width. The Oro Fino and Morning Star Co., from a rough clean-up of 50 tons of ore, realized \$1,704.56. If a close clean-up had been made, it would have given \$40 per ton. There is full five ft. of quartz in the ledge.

Ford & Gafford, of the Owyhee G. & S. M. Co., have leased the Lincoln mill, and are repairing it. It is estimated that \$100,000 will be taken out of Long Gulch this season. The Woodstock Co. have temporarily suspended work; cause, too much snow.

The Leviathan ledge, Flint Dist., is yielding ore beautifully streaked with ruby silver. A new and unprecedently rich ledge has been discovered at the head of Purdy Gulch.

## MONTANA.

From the *Gazette*, May 25th: The Cañon lode, Cañon Dist., rises 60 ft. above the level of the creek, a solid column of quartz 40 ft. in width at the base. The quartz is of a grayish white color, and very easily worked. It is entirely free from base metals.

The Rock Creek ledge has a 14 ft. crevice. The Morrison has one wall rock, and five ft. of quartz exposed. The S. Allen has a crevice  $3\frac{1}{2}$  ft. wide. The Black Prince, which works \$96 per ton silver, has a five foot crevice.

At the depth of 24 ft., ore from the Sam Gaty lode assays \$193.20 per ton. The



crevice at the discovery shaft is 26 ft. deep, and from three to seven ft. in width.

An excellent vein of fire clay, seven ft. in width, has been discovered near the Alta California lead, Colorado Dist., Jefferson county. It has been pronounced a genuine article after a practical test.

Post, May 18th: The largest nugget ever found in Montana was recently discovered by a man named Yager, on J. McEviloy & Co's claim in Fairweather Dist. Its weight is 15 lb. 3 ozs. It is of remarkable purity, containing no quartz, and very little base alloy; oblong in shape, with a shoulder like projection near one end. It is washed very smooth, and is believed to have come from a great distance above. It is the intention to have it forwarded to the States. Since "the find," the claim is held at high rates.

#### NEW MEXICO.

From the Albuquerque Press, May 4th: Mr. Cooley, one of the discoverers of the San Lizard Mountain mines, is exhibiting a specimen from that locality, the richest we ever saw. A piece, weighing less than two ozs., pounded up yielded 14 cts., or at the rate of \$2,000 per ton.

Manual Ysidri is running three arastras, which are yielding fully as well as the most sanguine expected.

#### ESMERALDA. NEVADA.

From the Territorial Enterprise, June 9th: The Wilson, Midas and Wheeler Cos. have taken out rock of an estimated value of \$40,000, and are still at work bringing it to the surface. Mr. Wilson is running a tunnel to strike the Wilson and Midas Cos., east of his. It is now in 455 ft., at which point wide spurs of pay ore are frequently met with, dipping towards the main ledge. Mr. Wilson is now in San Francisco. It is reported that he contemplates erecting a quartz mill near the mine, he being dissatisfied with the result of the crushing of his ore by the Pray and Blasdel mill.

Out of a tunnel 100 ft. long in the Midas mine, there has been taken fifty-two tons of ore, the bullion from which is valued at \$2,373.77.

A tunnel is being run on the Mastodon ledge, about 90 ft. below the shaft. At a distance of 100 ft., a fine vein of rich ore has been struck, but it is not supposed to be the main lead. One ton and 50 lbs. of the ore worked at the Ogden mill, yielded \$102 per ton gold, exclusive of silver.

Union, June 8th: Quite a number of strangers have been examining these mines lately, with the object of imparting information to parties at Virginia City, with a view of purchasing. Within the last 10 days, 2,900 lbs. of bullion from the Cornucopia mine at Partwick, have been received at the assay office of J. W. Poor.

#### HUMBOLDT.

From the Trespass, June 7th: The principal locations in this district are the Montezuma, Canada and Evening Star. The Montezuma is the leading mine. The top of the lode has been worked to the depth of from 18 to 25 ft., with 24 ft. face for excavating. About 15 tons of ore are extracted daily. Two tons of ore yields 2,400 lbs. of bullion, or 60 per cent. metal. The cost of mining, smelting, etc., is \$60 per ton.

Unionville Register, June 8th: New discoveries are being constantly made in Golconda Dist. A prospector comes in at night with all pockets and a hat full of ore from a new vein; assay good; next day, extensions located; many people happy, etc.

Ore from the Vicksburg Dist. is looking very fine, being rich in both silver and copper.

The Rochester Co. have completed their pumping and hoisting works. In a few hours the mine was freed of water, and, although a stream sufficient to run a 20-stamp mill flowed in constantly, no trouble was experienced in keeping it clear.

The Etna mill is running on ore from the Chloride ledge. Torrey has his furnaces ready to start up. He has several hundred tons of ore on the ground.

Montezuma Smelting Works shipped last week 1,400 ozs. fine bullion; also 10 tons crude bullion, and this week, so far, 12 tons. Machinery for a 15-stamp mill is on the way from California for the Essex Co., to be erected at Dun Glen. The Co. is working a full set of bands, and has out a large amount of fine ore awaiting the erection of the mill.

A bar of bullion has produced from 5,483 lbs. of ore from the Fisherman ledge, which is of the value of \$1,060.52. The ore was reduced at the Parrott mill, at Big creek, without roasting, and the bullion is .962 fine. The average assay of the pulp was \$386.84 per ton, of which the mill guaranteed 83 per cent.

H. W. Sayles has arrived from the copper district, in Humboldt river, with a lot of copper bullion, produced by roasting the ore on a common log fire.

#### PAHRANAGAT.

From the Rocky Mountain News, May 22d: These mines produce a rich silver ore, averaging \$260 per ton. The ore is not found in lodes, as in other mineral regions, but in a sort of "blow out" about three by five miles in area. The nearest water is some 12 miles, and the nearest timber of any value is 40 miles distant. One 5-stamp mill is the only work running. It crushes dry ores and amalgamates.

Reveille, June 8th: The New York Co. are making arrangements to erect a 10-stamp mill. The Alameda Co. has the machinery for its mill on the ground.

Mr. Stark, who visited Springer Hill, where a party of miners was working a ledge called Herman the Great, which was opened to the depth of 15 or 20 ft., says the ledge is 40 ft. wide, and inclosed between smooth walls, and that the ore is generally regarded as superior to any yet developed in the district. Several ledges in Irish Hill also, were developing excellent ore, and the prospects of the district looked brighter than ever.

#### REESSE RIVER.

From the Reveille, June 3d: The ledge discovered and located by Evans and Tennant lately, is proving rich. Several tons of ore which have been taken out, are estimated to yield from \$700 to \$800 per ton. The discoverers named the ledge the Adriatic; the lead is four ft. wide. The Rutland mill after lying idle for a while, has again started up with a good supply of quartz.

The Fisherman ledge of the Bullion Co. is the most fully developed in the district, and has been opened to a depth of about 50 ft., disclosing a vein of an average thickness of five ft. loaded with ore of extraordinary richness. It is reported that another mill of good power and capacity will be erected by the Co. in a few months.

About seven tons of Fortuna ore were reduced lately, the pulp of which was assayed by Boalt & Stetefeldt, with the following result: First-class ore, \$545.83; second-class ore, \$244.88 per ton.

June 4th: In Washington Dist., large, strong veins of silver-bearing mineral, which prospect well and show every indication of permanence, may be had at merely nominal terms. The Utica and Herkimer Co. have begun work on their mines, preparatory to the erection of reduction works. They have apparently fine property, which development may render remunerative. I am informed that an Eastern company will commence work in a short time upon the Prairie du Chien and other mines situated in Smith's Cañon.

A specimen of ore has been taken from the Fortuna mine seven in. wide, and the precise width of the vein.

June 6th: Samples of exceedingly rich gold and silver-bearing quartz continue to be brought to this city almost daily from Pine Grove, Washington Dist., Silver Bend and other mining localities in that direction.

The superintendent of the Mont Blanc mine, American Flat, has ordered hoisting machinery for the claim of that company in San Francisco, and expects to erect the same and work the mine in a scientific manner.

Territorial Enterprise, June 7th: The pay streak in the Highbridge, which was two ft. wide on the surface, has increased to 15 ft., and appears to be growing wider and richer. Excellent claims have been found about eight miles from Belmont, which are being vigorously prospected by parties from this city.

Reveille, June 6th: The Gilligan ledge, in Egan Cañon, appears to be the only one of the late discoveries that has been developed to advantage. It is one of the few mines in the State which has paid its own expenses from the first crushing of the ores. The ledge has been opened to a depth of 350 ft. The ore is argentiferous galena. The vein is 8 ft. wide, and produces, by the ordinary process, at the rate of \$345 per ton for 50 tons. The average yield of the ore exceeds \$100 per ton. The large mill which was bought by the Steptoe Co. and transported to Salt Lake City will be erected at Egan Cañon this summer.

A ton of ore taken from the Young America and Vestal ledges, Danville Dist., has a very peculiar look. It was obtained in the limestone, and assays very high.

The mill of the Centenary Co., Newark Dist., is being rapidly pushed to completion. It will not be furnished with roasting furnaces, as it is the opinion of the company that the ores of the district may be worked without the expensive aid of fire.

It is estimated that 300 tons of good milling ore has been extracted from the Chihuahua and Lincoln ledges. The vein of the Chihuahua is five ft. wide.

From 8,385 lbs. of second-class Kaleseed ore a silver bar, valued at \$723.58, was extracted.

The Buol North Star is now quite three

ft. thick, and the ore has diminished in quality. The last lot of ore sent to the mill averages \$326 per ton.

#### WASHOE.

[In the Stock Circular, in another portion of this paper, will be found late mining news from this district.]

From the Gold Hill News, June 8th: The new hoisting and pumping machinery of the Crown Point mine, when completed, will cost \$60,000, and will enable the company to work to a depth of 1,500 ft.

From 75 tons of ore from the Overman, two bars were extracted, which, assayed by Ruhling & Co., yielded an aggregate value of \$3,312—being only a partial clean-up of the bulk from that lot of ore.

The new engines for the Yellow Jacket are on the road.

The frame of the new Empire-Imperial works is ready to raise, and will be put up as soon as the foundation is completed.

Trespass, June 7th: It is estimated that within a year more than 50,000 ft. of sluices have been constructed in Gold Cañon, and that the annual value of gold and silver saved is at least \$1,000,000. Through Gold Cañon to the Yellow Jacket mine, every mill and arastra is busily at work.

A winze sunk on the north end of the body of ore of the Savage mine, next to the Hale & Norcross, has attained the depth of 110 ft. in splendid ore.

Enterprise, June 8th: The Overman Co. have found a narrow streak of fine ore that will mill at least \$50. This streak appears to be increasing in width, and has a permanent look. In another part of the mine, about the 400-foot level, they have in sight from 7,000 to 8,000 tons of ore; that will make \$25 per ton.

The old hoisting works of the Sierra Nevada Co. is being moved down to the new shaft.

Trespass, June 7th: Hundreds of thousands of tons of ore are lying in the dump piles of mines on the Comstock lode that will pay a large profit if reduced by water power instead of steam. From Cedar Hill to American Flat there can be extracted 2,000 lbs. of surface rock on croppings that will pay \$12 per ton.

Enterprise, June 8th: There was shipped during the past week from the office of Wells, Fargo & Co., 12,914 lbs. of bullion, valued at \$314,448.59.

#### OREGON.

The Cañon City correspondent of the Dalles Mountaineer, May 6th, says that some soldiers have found rich prospects somewhere within 20 or 30 miles of Dixie Creek, John Day country.

The Salem Unionist says that new mines have been discovered near the base of the Cascade mountains, on Crooked river. The mines are said to be a few miles from the Lebanon wagon road over the mountains. A nugget, valued at \$50, is reported.

The Jacksonville Press says that Cohn's quartz mill on Illinois river, Josephine Co., has been completed, and has gone to work. We may expect some startling reports from this quarter soon.

The Ensign says that there is a mountain of cinnabar near Cañonville, Southern Oregon. Several pieces have lately been taken from it, heavy and full of quicksilver.

#### UTAH.

From the Vedette, May 28th: In this vicinity a number of finely developed ledges have been discovered, and about a dozen tested. The average assay is \$125 per ton, silver; as much as \$26 gold is found. Work will be commenced on the North Star lode about the 15th of June. There is already erected one Scotch hearth, one stack furnace, one cupel furnace, a water wheel, fan, and several dwelling houses. It is the intention to erect four more stack furnaces, of three tons capacity each, and one cupel furnace in addition to the one already up. The ore yields 80 per cent. slack.

A specimen of copper ore taken from a ledge 12 miles northeast of Salt Lake, bears evidence of containing considerable silver in addition to copper.

There are rumors of a discovery of good gold diggings, 230 miles southeast of Salt Lake.

HOW TO CLEANSE CISTERNS.—Many persons are often greatly annoyed by foul cisterns, a ready way to cleanse which they would gladly learn. The following is recommended as both cheap and simple: After frequent cleaning and other experiments, all to no permanent utility, I was advised to put, say two pounds caustic soda in the water, and it purified it in a few hours. Since then, when I tried what is called concentrated lye, I had quite a good result. One or both of these articles can be obtained at any druggists.

#### "Millions of Dollars Lost" in Mining

Frequent assertions are made about the loss of "millions of dollars" in mining operations; one of the latest may be found in the American Exchange and Review, a "Miscellany of Useful Knowledge," for April, 1867. That journal says: "In Colorado, the grave of so much Eastern capital, where ten millions of dollars have been spent upon her gold impregnated ores, to solve the riddle, how to roast and how to amalgamate," etc.

Notwithstanding this enormous loss, we are pleased to find that "Hope is not yet dead," and that "the spirit of investigation is still at work."

Now, as ten millions of dollars, even in greenbacks, is a large sum, we should like to know how they managed to lose so much. The veins are represented as being from six inches to nine feet wide; and Governor Evans claims that in most of the lodes now worked, the average yield is \$36 per ton, which will be three-fold greater when the reduction of ore reaches the perfection of a fire assay. The present yield of \$36 ought to pay the expenses, at least. It is probable, however, that the writer refers to the loss of that amount, as exhibited on the face of the certificates of stock, in the various companies formed, which, from their failure to declare dividends, possess no market value. If so, the loss of "millions" is imaginary. In California, joint stock companies, numbering thousands, were incorporated with capital stocks, amounting in the aggregate to ten times ten millions of dollars; but where was the capital—where are the companies of ninety-nine out of every hundred? Some levied and collected assessments, until they could collect no more. Some of the money thus raised was expended for the legitimate object of mining; but much more of it was expended in litigation and the pay of officials, office rent, etc. Some of the stocks possessed value for a time, at the stock boards, and upon the stock exchange there were eager buyers and eager sellers. Much money changed hands; some were enriched, others were impoverished—one man's loss was another man's gain. The amount actually lost in the legitimate operation of mining was trifling, compared to the apparent loss upon Montgomery street. During this excitement, men without knowledge or experience in mining, became suddenly the oracles of the crowds on every corner, where they talked learnedly about dips, angles, horses, chimneys, chlorides, oxides, sulphides, the rock of the country, etc., etc., to the wondering admiration of their hearers. No man could walk a square along any street in San Francisco without hearing the sound of "feet;" but alas! that sound has died away. It is to be regretted that, while such men can gain the ear of capital, the honest miner—no matter how good a mine he may have to offer—must look in vain for a customer.

M.

A VALUABLE DISCOVERY.—It has recently been discovered that the fiber of the palm of the Indian Archipelago is almost indestructible under water. An anchor, which was fished up after sixty years of submersion, had a small piece of native rope made of this fiber attached to it, which was as strong as when placed there. A cigar manufacturer of Java, has used a lot of it as a filter for three or four months in the year, for the last twenty-five years, without observing any appearance of decay in the material. These evidences of the indestructible nature of this fiber are attracting considerable attention to it as an article of commercial value, which, it is thought, may be introduced into more general and extended use. It is about to be applied as a covering for a submarine cable, for which purpose it is expected to prove of great value.

THE TOBACCO YIELD.—Last year there were 350,501,500 pounds of tobacco produced in the United States, a falling off of 104,000,000 as compared with the crop of 1861.



## Mining and Scientific Press.

W. B. EWER, SENIOR EDITOR.

G. W. M. SMITH, W. B. EWER, A. T. DEWEY.  
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Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office. Jan. 11, 1866.

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## San Francisco:

Saturday Morning, June 15, 1867.

## Notices to Correspondents.

DEMOCRAT.—"By nature, all men are equal," is a sentiment that was publicly enunciated at a much earlier date than the Declaration of American Independence. The sentence, in the exact order in which it appears above, is first historically recorded as having been delivered during Wat Tyler's rebellion in England, on June 10th, in the year 1381. Its history is so curious and interesting that it merits fuller particulars. At Maidston, Wat Tyler was appointed the leader of the Commons (commonality) of Kent. At the same place they enlisted the service also of an itinerant, but powerful, preacher, named John Bale. On reaching Blackheath, which is in close proximity to London, the tumultuous multitude assembled is stated to have numbered one hundred thousand, to which Bale was unanimously appointed preacher. On the occasion of his first sermon (or rather harangue) he took for his text a doggerel rhyme, which is not unfrequently quoted, viz.:

"When Adam delved and Eve spun,  
Who was then the gentleman?"

The major part of his harangue consisted in showing that any other principle than that enunciated in the words which form the heading to this notice, is contrary to the views of the Creator, and concluded by declaring that when all distinctions of rank are abolished, all would be free, because all would be of the same nobility and of equal authority. This little bit of history is curious by way of illustrating how very slowly freedom and liberal ideas progress, as nearly six centuries have elapsed since the noble sentence adopted in our Declaration of Independence was first historically recorded, while the feeling for which it was the expression must have pervaded many minds long antecedent to its publication. The harangue under notice is further remarkable as having not improbably suggested to Byron the remarkable words:

"Hereditary bondage! know ye not  
Who would be free themselves must strike the blow!"

For, in his closing words, the observation was made "that God now offered them the means of recovering their liberty, and that if, in future, they continued slaves, the blame would rest with themselves."

LINGUISTIC STUDENT, Stockton.—What may be termed double dictionaries, now so commonly known, such as English and French, English and German, etc., and their inverse orders, however the fact may be surprising to many, is only of a comparatively recent origin. Many centuries rolled over the heads of both teachers and pupils before what must appear to the present generation so obvious an improvement was adopted. The Romans studied Greek through all the classical ages without any assistance derivable from a Greek and Latin Dictionary. Such a work, in fact, did not come into existence until both languages for the ordinary intercourse of life had ceased to exist, or become, as they are commonly called, *dead*. The earliest work of the character alluded to was the production of Crastone, an Italian monk of the fifteenth century, who lived at the time of the fall of Constantinople.

AN ADMIRER OF GEMS.—The earliest notice of any diamond having been discovered in California, is to be found in volume eight of Silliman's *Journal*, page 294. According to that communication it was of a straw yellow color, of the size of a pea, and possessed curved faces.

## The Prize Essay.

We presume that no apology is necessary for the continuation of our remarks under the above head. The variety of subjects embraced, and the vastness of the interests at stake, both present and prospective, the advancement of which is contemplated in the offering of the Mechanics' Institute prize, is patent to every intelligent Californian.

Foremost amongst the items to which we presume the attention of competitors will be chiefly drawn, is the agricultural part of the subject, embracing all matters relating to climate and soil, with a brief glance at such geological accompaniments as may usually be found in connection with great breadths of soil, and their adaptability or unfitness to the growth of cereal, forage and pasture grasses, together with where and how these may most profitably be cultivated; the different kinds of stock, individually or mixed, which can most profitably be raised and fed under their relatively varied conditions and markets, particularizing, chiefly, horned cattle, sheep, horses, hogs, etc., and the profits or otherwise which may fairly be anticipated as the result of such undertakings. Viniculture and the manufacture of wines and brandies will form important items under this general but leading subdivision; nor ought the subject of oleaginous seed crops, such, for instance, as flax, hemp and the cruciform plants, and the more arborescent castor and olive tree, to be neglected. Fruit-yielding trees and plants, such as the fig, orange, apple, pear, lemon, almond, peach, and other varieties of this last named genus, will necessarily occur to any one not wholly overlooking the fact that amongst the agremens of life our soil and climate, under proper conditions, produce, in quantity and quality, unexcelled, all the minor berries, as currants, raspberries, strawberries, gooseberries, etc., not forgetting the enormous pumpkin, squash, etc., obtainable either for the nutriment of cattle or household use. Nor must he overlooked the weighty and excellent root crops produced, especially beets and carrots, and the probability of insuring large and nutritious crops of different species of the *brassica* tribe, according to their adaptability for particular seasons and soils.

Many of these matters may be pertinently dwelt upon when treating upon our principal dairy products—milk, butter and cheese—allied also with special manufactures, such as sugar, etc. The advisability or otherwise of growing crops for textile purposes, alone or conjointly, for their seeds, might obtain a division, such as flax, hemp, cotton, or any substitute therefore. The subject of wool need not specially be here referred to, as it will undoubtedly occupy a prominent place, not only as respects the inquiry relating to the manufacturing department, but also largely, so far as relates to the economical management of sheep, according to localities.

The branch devoted to the consideration of the opportunities afforded in connection with our mining capabilities, especially those associated with the metals—gold, silver, mercury, lead and copper, and their most advantageous reduction, will necessarily embrace a wide field and ample scope for an excellent treatise. It ought to dwell equally upon our *disadvantages as advantages*, and ingeniously explain any errors committed by common practice, by which mining has been less successful than it should have been; and at the same time should lucidly describe any better mode of procedure followed elsewhere which could advantageously be adopted, notwithstanding our different positions.

The value of our coal and petroleum deposits, as well as many other matters connected with the mineral kingdom, ought not to be overlooked, both as respects the probability of present supply, and also as

regards their prospective importance hereafter. A similar observation may be made with regard to our timbers, and other products relating to agriculture. Lastly, but by no means of least importance, the economical application of our winter floods to purposes of irrigation and manufactures, ought not to be forgotten.

Having named many of the chief heads which should be treated upon, we shall proceed to describe what we conceive ought to be the leading principle which should form a most prominent feature in any essay for which the prize may be awarded. In doing so we may possibly differ very much from the opinion so far crudely formed by the public, with whom the general impression appears to be that an essay, such as it is attempted to obtain, would be mainly useful as inducing emigration. Whilst willing to admit its value in such direction, we are by no means inclined to deem it more primarily important than what may and ought to follow, by the diffusion of sound and useful information amongst our own population. We believe that a double end may be attained, in laying before our own people a succinct, yet, at the same time, an elaborate treatise, containing the principle or *rationale*, which ought to guide our agricultural, mining and mechanical energies; pointing out where and why such would be most available or unproductive, and where most required. A well written work of this kind would not only be useful to the inhabitants of our own coast, but would possess, intrinsically, *per se*, an interest to the citizen of the Eastern States, whether he be a resident of Missouri or New York, or a dweller in Maine or Louisiana. Nay, further; as such a synoptical joint agricultural and metallurgical treatise has never yet appeared, in any form or language, a well condensed work of the character proposed, would be as eagerly read, in consequence of its cosmopolitan character, by the native of the British Isles; or, if translated, be esteemed equally valuable by the hardy Norseman, on his pine-clad hills, as by the inhabitant of sunny Italy, who may be engaged either in the rearing of or treating the produce of the silkworm, the preparation of olive oil for table use, or the delicious *Lachrymæ Christi*.

The reason why cereals, of different varieties, flourish better in one clime or character of soil, than another, ought to be explained—a remark which holds good with other plants also, whether it regards the olive, any species of grape, or any variety of wine. We have climes and soils verging from Alpine rockiness and cold, to the semi-tropical conditions which surround the living occupants of the Celtiberian peninsula with its vine, olive, mulberry, orange and lemon groves, and its luxuriant *vegas*, all of which latter might be paralleled in this State by the exercise of skill, capital and forethought.

Since the above was put in type, the Institute has made its official announcement of the prize offer, with the names of the gentlemen selected to constitute the Committee of Judges, the time allowed for competitors to prepare their articles, etc. This announcement will be found in our advertising columns. Of the Committee, the *Bulletin* of this city says:

It is composed of gentlemen of ability, public spirit and integrity of purpose, well known in California. They have been chosen with a view to their practical knowledge of the resources of the State, and their high character is a guarantee that parties competing for the premium will have their essays treated in a fair and impartial manner by competent judges. Gov. Low, who heads the list, has been a resident of California since 1849, and is well acquainted with the resources and wants of the State. Gen. Halleck arrived prior to the discovery of gold at Coloma (1848), and has a practical experience of great value. Prof. Whitney is well known to the public through his labors as chief officer of the State Geological survey. Prof. Ewer has an experience and knowledge of the mineral resources

of the State and of the opening for successful industrial labor that will make him very valuable as a member of the Committee. James Otis is a member of the firm of Macondray & Co., of this city, and has a thorough knowledge of our commercial wants and the markets that are accessible for both our products and manufactures. B. N. Bugbey is the noted viniculturalist and wine-grower, whose efforts in the introduction and propagation of the most valuable foreign wine grapes has been of great benefit to our wine interest. W. Gouverneur Morris is one of the largest fruit and grain-growers in Napa county, and is reported to be well fitted to judge in all matters relating to those interests. As a whole, the Committee is a most competent one for the purpose named, and we look for valuable results from their labors.

NEW STEAM STAMP MILLS.—J. E. Clayton, M. E., who recently arrived from the East, has shipped from New York three two-stamp steam mills, similar to that described by us a few weeks since as having been put in operation at the Pacific Foundry. The chief novelty in the present mills is the existence of a steam connection between the lower partition of the two steam cylinders, by which the steam, when the blow is given, instead of being compressed, so as to lift the stamp by its elasticity (thus wasting a large amount of power), is made to pass into the adjoining cylinder and raise the other stamp, and *vice versa*. The improvement must be obvious.

Mr. Clayton, during his absence, has also devised several other contrivances, which are thought to be important in economizing labor and power in the process of stamping, one of which is a conveniently arranged screen, by which a universal discharge is effected on all sides of the battery at the same time. But perhaps the most important idea is the arrangement of a steam jet to take the place of the suction blower in dry crushing. The steam is not only a convenient and economical mode of exhausting the battery of the quartz as fast as it is pulverized sufficiently fine, but it also moistens it, so that there is no chance of loss by its being carried away with the escape of the exhaust blast as it leaves the dust or ore chamber. We presume that Mr. C. will take an early opportunity to give our miners a practical test of his alleged improvements. He has now gone to the Silver Peak District, Nevada, to take charge of the development of a large mining property there, which has recently passed into the hands of a New York company.

LEVY'S FIRE ANNIHILATORS.—We have just seen at 304 Montgomery street, three of Levy Brothers' portable self-acting fire-extinguishers, which are now in use in the principal Eastern cities, and which reached here on the last steamer. The machine is so light that it is strapped upon a man's shoulders while being operated. Allusion has already been made to it in our columns. We are informed by the agent, Mr. E. L. Levy, that there will be a public exhibition of the same some time next week, when all interested will have an opportunity of witnessing the mode of operating, and can decide for themselves as to its merits.

RETURNED.—Mr. Myers, who has the patent right for this coast for Leffel's American double turbine water wheel, arrived from the East by the last steamer. He is accompanied by several neighbors, who come for permanent settlement. We are informed that three manufactories in the Eastern States are kept busy in supplying the demand for the above named wheels. Mr. Myers has on the way for Oregon all the apparatus specially required for their manufacture. The Oregon Iron Smelting Works will soon be in operation, when entirely home water wheels will be issued.

REMOVAL.—The office of the Pacific Chemical Works (Messrs. Falkenau & Hanks) has been removed from its late location on Washington, to No. 623 Montgomery street, opposite Montgomery Block.



**A CHANCE FOR CAPITALISTS.**—From a private letter from Gen. C. A. Reed, Adjutant General of Oregon, dated Salem, June 5th, we extract the following:

"I wish I was able to give you some glowing accounts from the Santiam mines, and who knows but what I may yet. I have not the least doubt but that good mines are there, and that they will be found, and made available. McDonald has made one trip there this spring, and reports everything in good condition. Our quartz mill is as clear of rust or damage as it was the day we left it. The sawmill is in readiness to lay open those fine white pines which abound in that region, and the railways stand ready to dump the quartz rock at the mill. I wonder if there is not some of your Californians competent to test these mines. Our leads are fine in appearance, varying from eight to twelve feet in width, containing an abundance of mineral of some kind. The man who heretofore superintended the working of the ore did not understand the operation sufficiently to save his amalgam.

You will bear in mind that these mines are only one day's journey from here (Salem) forty miles of which is through a level country. The mill is surrounded with an abundance of timber, and can be worked at a very low figure. We have been to a great outlay, and would be glad to get some one interested with us that understands the business."

It seems after all that it takes a Californian to develop mines, and we doubt not but that our neighbor, Oregon, would be a good place for some of our competent miners to visit. It is known to abound in minerals, especially the Cascade range, yet it has never had parties sufficiently versed in mineralogy, to examine and test its extent and value. Oregonians are, as a general thing, liberal to Californians, and in this case would be apt to be doubly so.

## MECHANICS' INSTITUTE.

### Resources of California.

THE MECHANICS' INSTITUTE of San Francisco, hereby offer a PREMIUM OF ONE THOUSAND (\$1,000) DOLLARS for the best Essay on the "RESOURCES OF CALIFORNIA, AND BEST METHOD OF DEVELOPING THE SAME," under the following conditions: One-half of the premium in cash on the certified award of the Committee of Judges, and the balance from the first proceeds of sales of the successful work, which is to belong to, and will be published by, the Institute.

The Essays are to be handed in to the Librarian of the Institute on or before the FIRST DAY OF JUNE, 1887, and the award will be made by the Judges at the opening of the Industrial Exhibition, which is to be held in August or September following. The Essay should be divided into three great heads, viz.: Mineral, Agricultural and Industrial Resources, with proper subdivisions of each subject. It should be sufficient in quantity to form a duodecimo (12mo) volume of from 250 to 300 pages long primer type, solid.

Writers will sign their articles in cypher, and send their names and address in sealed envelopes, which will be kept in a secure place by the Institute, and only be opened when the award is made. The manuscripts of unsuccessful writers will be returned to them without publicity.

The Committee of Judges have the right to reject all Essays in which they do not consider them worthy of publication or the premium. No further instructions than are contained in this advertisement will be given to this Committee, nor will they be subjected to any advice from the officers or members of the Institute in regard to their proposed action. All manuscript submitted must be in clear, legible writing, so as to admit of easy reading.

The following named gentlemen, who have been selected for their well known ability, public spirit and integrity of purpose, will compose the Committee of Judges: Hon. Fred F. Low, Maj. Gen. H. W. Halleck, U. S. A., Prof. J. D. Whitney, Prof. W. B. Ewer, James Otis, E. N. Bugboy, Wm. Governor Morris, By order of the Board of Directors.

D. E. HAYES, Secretary.  
San Francisco, June 12, 1887. 24v14-2m

Jacob Szew, Pioneer Photographer, 612 Clay street, north side, four doors above Montgomery, (also 315 Montgomery street), takes all kinds of Photographs in the best style of the Art. He would invite especial attention to the new "Cibacit Photographs," which he is taking to perfection. 19v14tf

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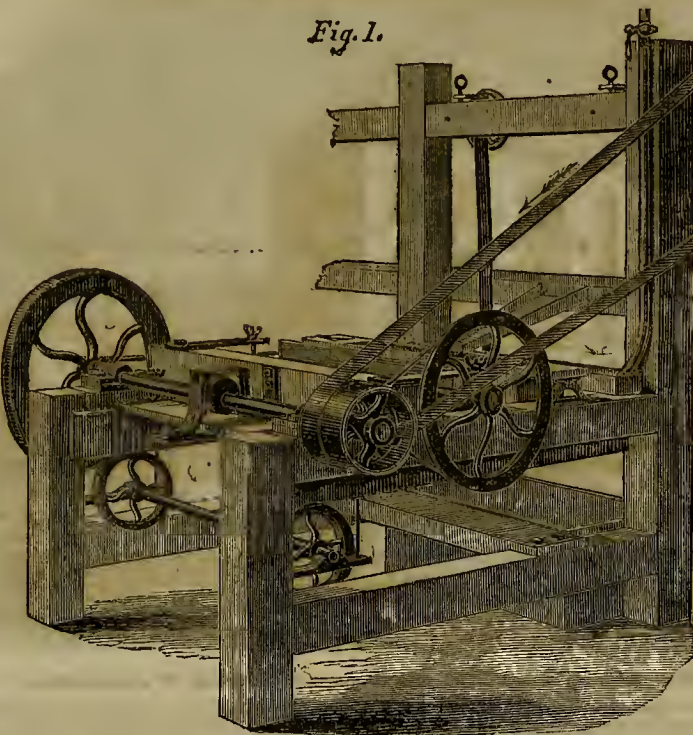
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J. A. EATON & CO.,

Managers Pacific Branch, 302 Montgomery st. 20v14n9p SAN FRANCISCO.

## \$85 FOR HUNTER'S IMPROVED CONCENTRATOR.

Fig. 1.



### HUNTER'S CONCENTRATOR.

The patentee is prepared to sell his Concentrator at the above price, and guarantees, when the machine is run according to directions, to give 20 per cent. better results than from any Concentrator built on this Coast, and will refund the money if they will not perform what is claimed for them. Machines with copper plates, will cost \$10 extra.

### FOR \$50.

**HUNTER'S EUREKA AMALGAMATOR.** For sale, the right to build and use in mills. A working plan will be furnished each purchaser. Five machines can be seen in operation at the Eureka Mill, Orass Valley. The cost of the Irons for the machine, without the Iron-box, is about \$100. The box will answer of wood.

By reference to the MINING AND SCIENTIFIC PRESS of May 25, a full description of the above Machines may be found. For particulars, send for Circulars, or address

ANDREW HUNTER,

Union Foundry, San Francisco.

**Brown's Filtering Heater.**—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, saves the boiler, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on Application, in person or by letter, to 5v14-ty AUSTIN A. WELLS, Agent.

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEERS, corner of Pine and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with pure gold—thus restoring them to their original usefulness and beauty.

Call and examine the work. Finest quality of artificial work also manufactured. 16v14-ty

### Perry Davis' Vegetable Pain Killer.

Importance of having Davis' Pain Killer always on hand. Wonderful cure of the Rev. D. L. Brayton, Missionary in India, who was stung by a scorpion. Extract from his letter, published in the Baptist Missionary Magazine:

"For the first time since I have been in India, I have been stung by a scorpion. I went out this morning to my exercises, as usual, at early dawn, and having occasion to use an old box, on taking off the cover I put my hand on a scorpion, which immediately resented the insult by thrusting its sting into the palm of my hand. The instantaneous and severe pain which darted through the system is quite incredible! What an awfully virulent poison their sting must contain! I drew out my bottle of Davis' Pain Killer, and found it to be true to its name; after a moment's relief, I saturated a small piece of sponge, bound it on my hand, and went about my exercises, feeling no more particular inconvenience. Sold by all Medicine Dealers everywhere. 22v14-3p

### MAURICE DORE & CO.,

Real Estate, Stock and General Auctioneers, Office and Salesroom, 327 Montgomery st.

H. A. COBB, Auctioneer.

### Guardian's Sale of Real Estate.

NOTICE IS HEREBY GIVEN, THAT IN PURSUANCE of the order of the Probate Court of the City and County of San Francisco, in the State of California, made on the 25th day of January, A. D. 1887, in the matter of the guardianship of the person and estate of Bertha Louisa Washburn, a minor, the undersigned, Guardian of the person and estate of said minor, will sell at public auction, to the highest bidder, for cash, in separate parcels, and subject to confirmation by said Probate Court, on SATURDAY, the 6th day of July, A. D. 1887, at 12 o'clock M., at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, in said City and County, all the right, title, interest and estate of said minor in and to each of those lots, pieces or parcels of land situated, lying and being in the said city and county, and described as follows, viz:

PARCEL No. 1.—Lot on the west side of Stockton street, commencing 95 3/4 feet north of Jackson street; thence north 20 feet 7 1/2 inches, by a depth of 93 1/2 feet.

PARCEL No. 2.—Lot on the east side of Stockton street, commencing 87 1/2 feet north from N. E. corner of Stockton and Greenwich streets; thence north 50 feet, by a depth of 127 1/2 feet.

PARCEL No. 3.—Lot on S. W. corner of Sacramento and Gustavus streets, 60 feet front on Sacramento street by 77 1/2 feet deep on Gustavus street.

Terms and conditions of sale—Cash to be paid on the day of sale.

E. H. WASHBURN, Guardian of the person and estate of said minor. San Francisco, June 11th, 1887. 24v14-3w

### FAIRBANK'S PATENT

U. S. STANDARD



COUNTER AND

### PLATFORM SCALES!

Also, large Scales for weighing loaded wagons of Ore, Hay, etc., from 5,000 to 40,000 pounds capacity. Manufacturers' Branch House, FAIRBANKS & HUTCHINSON, 120 California street, San Francisco. 24v14-cw6m



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—OF—

### RUPTURE!

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Woodward's Gardens, ART GALLERY, MUSEUM, GYMNASIUM, —AND— ZOOLOGICAL GARDENS.

THESE BEAUTIFUL GARDENS ARE VISITED DAILY by hundreds of the pleasure-seeking public, and all agree in pronouncing them the best and only first-class suburban resort on the Pacific Coast.

The extensive grounds are covered with the rarest trees and shrubbery, making it a most desirable spot for small parties wishing to enjoy a Pic-Nic. To all departments new attractions are being constantly added.

These Gardens are accessible by the Howard, Folsom and Market street Cars. Entrances on Mission and Valencia streets, between Thirteenth and Fourteenth. OPEN EVERY DAY. Admission to all parts, 25 Cents. Children, under 12 years, half price. 24v14-c

Changing the Address.—No charge is made for changing the address of this paper. To give all necessary information, write us plainly as follows: "Change address of the Mining and Scientific Press from Mr. ... at ... P. O. ... County, ... State, to Mr. ... at ... P. O. ... County, ... State. ... 1887."

**Builders' Insurance Company—** OFFICE IN THE BUILDING OF THE CALIFORNIA SAVINGS BANK, California street, one door from Sansome street. FIRE AND MARINE INSURANCE. 10v14-9pqr

**Gold Bars,** of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

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### REMOVAL.

### PACIFIC CHEMICAL WORKS.

FALKENAU & HANKS HAVE REMOVED THEIR OFFICE to 623 Montgomery street, opposite Montgomery Block, where they will receive orders for Chemicals of all descriptions, and for Assays and Analyses of Ores, Minerals, Metallurgical Products, Mineral Waters, Commercial Articles, etc. Laboratory, corner of Center and Folsom streets, Mission. 24v14-4w

### Piles! Piles! Piles!

NOT PILES OF GOLD, NOR YET OF SILVER, SO much coveted by all men; but the BLEEDING, BLIND or EXTERNAL PILES, can be easily and speedily cured by the use of

### WOOD'S SUB-POSITORY.

It is a preparation totally distinct from anything heretofore offered as a remedy for this painful and often fatal complaint. The SUB-POSITORY is neither a pill, powder, wash or salve, and yet it has proved to be a certain Remedy for the Piles. Do not doubt this assertion, or delay testing the truth of it if you are troubled with the Piles—you will not be deceived in it.

Sold wholesale and retail by J. H. REDINGTON & CO., Nos. 416 and 418 Front street; GEO. ORISWOLD, corner of Mission and First streets; OLD FAMILY DRUG STORE, corner Mission and Second streets; UNITED STATES DRUG STORE, Bush street, between Montgomery and Kearny. C. WOOD, Proprietor, No. 63 Tebama street, between First and Second. 24v14-3m

### LINSEED OIL.

### The Pacific Linseed Oil & Lead Works

Are now prepared to furnish dealers and consumers

### Pure Linseed Oil.

Raw or Baked, at the Lowest Market Rates. We call especial attention to the quality of our Oil, believing it to be superior to any imported Oil offered in this market. Orders from the country will have prompt attention.

Address, Pacific Linseed Oil and Lead Works, Care of L. B. BENCHLEY & CO., 19v14-3m9p San Francisco.

### PACIFIC

### Rolling Mill and Forge Co., SAN FRANCISCO, CAL.

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### RAILROAD AND OTHER IRON

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Embracing ALL SIZES of Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

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Of every description and size.

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The highest price paid for Scrap Iron. 9v14-3m9p

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MANUFACTURERS OF

### FLAT & ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach SAN FRANCISCO. NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is applied and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to many of whom we refer those interested as to the great advantages over any other kind of rope, effecting a immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing the safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size, whether for wire or hemp rope.

We manufacture of all sizes, and in any length—Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—Soft Steel Wire Rope—For Derrick Fall Ropes—very strong and durable—one third the weight of hemp of equal strength, (saving in freight for remote localities). Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire Rope—For Ship's Rigging, Derrick Gears, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks supplied.

Iron and Copper Wire Rope—1/2 to 1/4 inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Rope, Steel Wire Rope, Hemp Rope, and Chain.

Iron Wire Rope.	Steel Wire Rope.	Hemp Rope.	Chain.	Equivalent Strength.
Cr. 1 1/2" pr. 100 ft.	Cr. 1 1/2" pr. 100 ft.	Cr. 1 1/2" pr. 100 ft.	Cr. 1 1/2" pr. 100 ft.	Cr. 1 1/2" pr. 100 ft.
2 1/2	1 1/2	5	100	250
2 1/2	1 1/2	5	100	250
3 1/2	2 1/2	8	150	375
3 1/2	2 1/2	8	150	375

Pamphlets containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 24v13-6m9p





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic, Hay, Rag, screw and Drop Presses, Coining Machinery, File Drivers, Bark and Mark Mills, and all kinds of Castings.

**ENGINES.** Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use. W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

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**PUMPS.** The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's improved Tractory Curve Pan, Zenas Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Frater's concentrators, Wabbe's pans, Beers' pan, German Barrels, Astra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for wood or iron frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BORING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

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STEAM ENGINES AND QUARTZ MILLS;  
DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,  
Requires no springs or screws; is always steam tight;

without excessive friction, and never  
gets slack or leaky.

WHEELER & RANDALL'S  
NEW GRINDER AND AMALGAMATOR

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AMALGAMATOR AND SEPARATOR,  
Tyler's Improved Water Wheel,

Giving the greatest power, at lower cost, than any  
Wheel in use. There are over 1,500 running,  
giving universal satisfaction.

KNOX'S AMALGAMATORS,  
WITH PALMER'S PATENT STEAM CHEST,

Superior for working either Gold or Silver Ores.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz  
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either in Mining or Milling, we are prepared to furnish, at  
the shortest notice, the most perfect machinery for reduc-  
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Steam Engines, Boilers,

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And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired  
with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old cylinders, manufactured  
to order.

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MACHINERY OF EVERY DESCRIPTION MADE AND

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Manufacturers of

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Quartz Machinery, Saw, Flour and Sugar Mills, Mining  
Pumps, Hoisting Gear, Agricultural Implements, etc.

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Wine, Cider, Cotton and Tobacco Presses

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STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and  
Dies warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston-  
Packing, requires no springs or screws; is always steam-  
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MACHINERY, OF ALL DESCRIPTIONS  
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LEWIS COFFEY & RISDON,  
Steam Boiler & Sheet Iron Works.

THE only exclusively Boiler Making establishment on the  
Pacific Coast owned and conducted by Practical Boiler  
Makers. All orders for New Work and the repairing of Old  
Work, executed as ordered, and warranted as to quality.

Old Stand, corner of Bush and Market streets, opposite  
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ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal  
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MANUFACTURE

STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Re-  
quires no springs or screws; is always steam-tight; without  
excessive friction, and never gets slack or leaky.

HANSCOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else

Wheeler & Randall's New Grinder and

Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use

Send for one of our circulars, giving full tables

All Wheels warranted to give the power as set forth, or  
the money will be refunded.

Sole makers for this coast of the "Fendergast  
White Iron Stamp Shoes and Dies.

None genuine unless obtained from us. Every one war-  
ranted.

Patented Machinery of all kinds will be furnished by us  
at market prices. Particular attention given to drawings  
and specifications of machinery, which will be made to  
order. The patronage of the public is respectfully solicited.  
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STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,  
Amalgamators, and all kinds  
of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mis-  
sion street, San Francisco. 3-4y

NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets,  
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MARINE.

Locomotive,

And all kinds of  
HIGH PRESSURE

Steam Boilers

MADE

All Boilers guaranteed and  
tested by U. S. Boiler In-  
spector before sent out of  
the Shop, at Shop expense.

All kinds of Sheet Iron and  
Water Pipe, Coal Oil  
Stills, Wrought Iron  
Worms, etc., etc.  
Manufactured to Order.

Old Boilers Repaired  
D. CAMERON.

6v12-ly

NICKEL PENNY.—Has anybody a nickel  
penny of 1858? The Washington Star says  
there is an active search for them, and that  
they are considered worth twenty-five cents  
each, because they have been almost wholly  
withdrawn from circulation, and will be  
very valuable by-and-by in completing col-  
lections. The penny in question will be  
remembered as bearing on one face the rep-  
resentation of a buzzard instead of an eagle.  
Exchange.

We have about a dozen of them. Who  
bids? By the way, the "buzzard" was on  
the issues of both 1858 and 1857.

TO DESTROY FLIES.—To one pint of milk  
add a quarter of a pound of raw sugar, and  
two ounces of ground pepper, simmer them  
together eight or ten minutes, and place it  
about in shallow dishes. The flies attack it  
greedily and are soon suffocated. By this  
method, kitchens, etc., may be kept clear of  
flies all summer without the danger attending  
poison.

CAVERN.—A cave has been found on the  
hills between here and Grass Valley, says  
the Napa Reporter. It was explored as far  
as a hundred feet, and contained several  
chambers from ten to twenty feet in height.  
The explorer was afraid to go any further  
in, on account of the nature of the interior.  
A party are going from Napa shortly, with  
a view of exploring it completely.

SOLIDIFIED GLYCERINE.—An English  
company are now manufacturing a toilet  
soap with which solidified glycerine is amal-  
gamated in equal proportions by weight.  
The result is a semi-transparent tablet,  
which lathers well and wears well, and de-  
serves a wide popularity.

BED BUGS, it is said, have a great aversion  
to salt. If the articles and places infested  
with bed bugs are washed with salt water,  
and the crevices in which the vermin hide  
are filled with it, they will give no more  
trouble.

An ancient tunnel was discovered, not  
long since, under a river in the interior of  
Peru, the work of the old Inca Indians, and  
a lasting proof of their civilization.

TOWNE & BACON,  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better  
Than other offices

In this City,  
**536** Try them  
With a Job,  
And you will be  
Satisfied the above  
Statements are facts.  
Their office is at 536  
Clay St., below Montgom'y,  
Over Pacific Fruit Market.

#### CITY IRON WORKS COMPANY.

F. CLERC, B. KLINGELAU, W. DEBAIE.

CLERC & CO.,

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

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Much complaint has reached us, through various sources, at the general lack of knowledge at the East, with regard to mining and other operations on this coast, and the frequent impositions practiced upon the public there, in consequence, by irresponsible persons passing off upon unsuspecting victims worthless mining stock, or persuading them, by false representations, to organize companies and advance moneys upon worthless ground, or ground which oftentimes has neither value or locality. If our friends at the East, who are still anxious to engage in the laudable venture of mining enterprise, would do so intelligently, let them subscribe for and carefully consult the only journal on the Pacific coast where every mining enterprise that is worth naming is, from time to time, noticed, as its merits may warrant. A mining enterprise on the Pacific coast, which is not referred to in this journal, in some way or other, as often as once in three or four months, is certainly one which people in the Atlantic States should beware of. Our advice to people at the East is never to venture small amounts in mining. If you must start small, let a number of such club together, so as to make the aggregate amount to be invested, such as may be worth your while to inquire into.

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tions of the General Land Commissioner, post  
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Mining and Scientific Press, San Francisco.

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THE PATENT AGENCY OF THE MINING AND SCIENTIFIC PRESS  
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## To Those Whose Interests We Represent.

While there is every reason for gratification at the circulation which this journal has already reached, we are yet well aware that there are great numbers of miners, mechanics and lovers of science to whom it might be made a source of much usefulness and profit. We feel no hesitation or modesty in urging the claims of the paper upon the attention of all for whose especial benefit its publication is intended. Being the only journal of the kind this side of the Rocky Mountains, and having a wide circulation distributed throughout all the States and Territories on the Pacific coast, and among the most intelligent and thriving portion of our people, it presents a new and valuable medium for advertising—a feature which our columns show for themselves, is quite generally appreciated.

New subscriptions will be received at all times by mail or otherwise. Those who have friends that they think might be interested or benefited by the paper, will confer a favor both upon them and us by calling their attention to this matter, and at this time. By so doing they will place us under still greater obligations to themselves, and enable us by its increased receipts, to add still more to the value of the paper. It is thus that in the growing welfare of the country and people, this journal hopes to find its due share of prosperity, and a fair reward for its efforts in behalf of science, of industry and of progress.

We trust that it is needless to urge upon our readers the necessity of promptly renewing their subscriptions. The two indexes for volumes XII and XIII, which we have already published, and the 500 ample pages of reading matter, apart from advertisements, to say nothing of our numerous engravings and illustrations, speak more for the value which we give for the price of a year's subscription than we can say in this connection. For the next year we can safely promise even more. Increased experience and enlarged means and facilities will secure this. Everything that untiring industry and reasonable expense can accomplish, will be done to render the MINING AND SCIENTIFIC PRESS a journal which shall be creditable to the interests which it represents, and of special value to its readers.

Jan. 1, 1867.

## New Mining Advertisements.

**Dardanelles Copper Mining Company.** Location: Low Divide District, Del Norte County, California. Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of June, 1867, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary at Crescent City, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the third day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. CURTIS, Secretary.  
Office, at Woodbury & Marboller's, Crescent City, California. jels

**Gold Hill Tunneling Gold and Silver Mining Company.** Location: Gold Hill Mining District, County of Storey, State of Nevada. Notice.—The Fourth Annual Meeting of the stockholders of the above named Company, will be held at their office, 415 Montgomery street, San Francisco, Cal., on SATURDAY, the twentieth (20th) day of July, 1867, at 3 1/2 o'clock, P. M., for the purpose of electing Trustees to serve for the ensuing year, and such other business as may properly come before it.

R. WEECER, Secretary.  
San Francisco, June 15, 1867. jels 5v\*

**Hope Gravel Mining Company.** Location of Works and Property: Orass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of June, 1867, an assessment (No. 15) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. jels

**Oxford Beta Tunnel and Mining Company.** Esmeralda District and County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of June, 1867, an assessment (No. 22) of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to the Superintendent at the mine.

Any stock upon which said assessment shall remain unpaid on the tenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth (29th) day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

OEO. H. PECK, Secretary.  
Office, 212 Clay street, San Francisco. jels

OLNEY & Co., Auctioneers and Real Estate Agents, attend promptly to all business entrusted to their care in San Francisco and Oakland. Mining and other corporations will find Col. Olney well posted and thorough in transacting sales of delinquent stock. Office, on Broadway, Oakland, and No. 318 Montgomery street, San Francisco. nolo

**Sophia Consolidated Gold and Silver Mining Company.** Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eleventh day of June, 1867, an assessment of three dollars (\$3) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office, No. 641 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twelfth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-sixth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID E. JOSEPH, Secretary.  
Office, 641 Washington street, San Francisco. jels

**St. Louis Silver Mining Company, Cortez District.** Lander County, Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the fourth day of May, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names	No. Shares.	Amount.
Baldwin, John E.	50	\$115 00
Berry, Henry	10	25 00
Cassell, John F.	10	25 00
Cheney, Richard	75	375 00
DeWitt, W. L.	5	25 00
Hathaway, B. W.	75	375 00
Howard, George	50	250 00
Huwahurst, Robert	31	155 00
Jones, Rowland	5	10 00
Kilbe, H. C.	5	25 00
Land, C. B.	70	350 00
Lagerman, H. W.	10	20 00
Macpherson, A. W.	50	250 00
Moore, J. F.	115	575 00
Powell, Elijah	75	375 00
Pasmore, W.	5	25 00
Prairie, W. E.	5	25 00
Russell, George	75	375 00
Thomas, G. W.	5	25 00
Taylor, John	5	25 00
Whitney, James	5	25 00
Webster, Simon	1212	75 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of May, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, Cal., on Tuesday, the second day of July, 1867, at the hour of 12 o'clock, noon, of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

R. N. VAN BRUNT, Secretary.  
Office, 331 Montgomery street, San Francisco. jels

## To Capitalists.

**GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with steam mill fitted up with Amalgamating Pans, etc., FOR SALE.** The mine has three main veins, and the surface is covered with gold. The mill is complete, and the mine is in good working order. Good wagon roads all the way. Apply to BELLOC FREER, Bankers, 535 Clay street, San Francisco.

23v13-6m

## Mining Notices--Continued.

**Adella Gold Mining Company, Rock Creek, Sierra County, California.**

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-ninth day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the tenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. C. TAYLOR, Secretary.  
Office, 429 Pacific street, San Francisco, Cal. jels

**Cineo Senores Gold and Silver Mining Company.** Copala, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 523 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.  
Office, No. 523 Clay street, San Francisco. m4

**Postponement.**—The day for deeming stock delinquent on the above assessment, is hereby postponed until Saturday, the 28th day of June, 1867, and the sale thereof until Saturday, the 30th day of July, 1867. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.  
jels

**Chilpaneca Mining Company.** District of Ures, Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, No. 318 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. jels

**Cordillera Gold and Silver Mining Company.** Chihuahua, Morelos Mining District, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of April, 1867, an assessment of one (\$1) dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, No. 318 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-seventh day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.  
Office, 321 Washington street, San Francisco, Cal. m25

**Postponement.**—The day for deeming stock delinquent on the above assessment is hereby postponed until Friday, the 21st day of June, 1867. By order of the Board of Trustees.

HENRY R. REED, Secretary.  
jels

**Our Circulation.**—The MINING AND SCIENTIFIC PRESS has a large and permanent subscription list, and enjoys a more universal circulation among stockholders and persons directly interested in mining than any other paper on this coast.

**Camargo Gold and Silver Mining Company.** Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of February, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate.	No. Shares.	Amount.
Camargo, J. A.	77	5	\$50 00
Drinkhouse, J. A.	51	3	30 00
Dinkelspiel, L.	51	3	30 00
Harker, W. B. C.	25	10	200 00
Harker, W. B. C.	24	3	60 00
Harker, W. B. C.	154	3	60 00
Jacobs, N. B.	25	1	20 00
Fassett, N. C.	132	1	20 00
Gray, Asaph	133	3	60 00
Lander, B. C.	69	5	120 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of February, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, by Jones & Bendixen, Auctioneers, on the 21st day of May, 1867, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

N. C. FASSETT, Secretary.  
Office, 402 Front street, San Francisco. mnr30

**Postponement.**—The above sale is hereby postponed until Friday, the 21st day of June, 1867, at the same hour and place. By order of the Board of Trustees.

my25 N. C. FASSETT, Secretary.

**De Soto Gold and Silver Mining Company.** Location of Works: Star District, Humboldt County, State of Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twentieth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate.	No. Shares.	Amount.
Beldeeman, J. C.	157	15	\$9 00
Beldeeman, J. C.	450	10	6 00
Bigler, E. A.	532	5	4 50
Byrnes, John	536	5	4 50
Bigler, John	555	10	6 00
Dock, Luther	507	10	6 00
Derby, Thomas	577	10	6 00
Derby, W. B.	585	2 1/2	2 12 1/2
Davis, C. W.	750	4	3 00
Fraser, James	263	5	3 00
Fitch, J. B.	563	25	30 00
Glover, J. W.	542	40	24 00
Harris, J. H.	516	50	30 00
Hutchinson, J. R.	525	100	60 00
Knowlton, G. H.	597	5	3 00
Patten, W. V.	528	60	30 00
Richards, George	520	5	3 00
Sanderson, George	529	50	30 00
Thomas, Richard	519	5	3 00
Wennerhold, C.	512	5	3 00
Wilson, R. B.	522	10	6 00

And in accordance with law, and an order of the Board of Trustees, made on the said twentieth day of April, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 53 Exchange Building, northwest corner of Washington and Montgomery streets, San Francisco, Cal., on the nineteenth day of June, 1867, at the hour of one o'clock P. M. of said day, to the highest bidder, for cash, in U. S. gold coin, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN M. BURNETT, Secretary.  
Office, No. 53 Exchange Building, northwest corner of Washington and Montgomery streets, San Francisco, California. jel

**Hause Copper Mining Company.** Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of May, 1867, an assessment of twenty-five cents (25c) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the Elina Iron Works, Fremont street, between California and Montgomery streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth (20th) day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN HANCOCK, Secretary.  
Office, at the Elina Iron Works, Fremont street, between Howard and Folsom, San Francisco. Office hours: from 8 A. M. to 12 M. my25

**I. X. L. Gold and Silver Mining Company.** Location of Mine: Silver Mountain District, Alpine County, Cal.

Notice.—There is delinquent, upon the following described stock, on account of assessment levied on the thirtieth day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names	No. Certificate.	No. Shares.	Amount.
Jas. A. Blaisdell	237	2	15 00
H. C. Blaisdell	237	2	15 00
H. G. Blaisdell	232	1	15 00
John F. Davis	232	4	60 00
Wm. D. Davis	232	3 1/2	45 00
Wm. D. Davis	232	4	60 00
C. R. Callender	214	4	60 00
D. H. Callender	224	10	150 00
Ann Hogan	176	7	105 00
J. A. Johnson	238	5	75 00
Isiah Legro	212	5	75 00
Hart, C. A.	234	1	15 00
Geo. C. McAllister	214	4	60 00
Sam'l Michelson	187	1	15 00
Thos. Newcomb	181	5	75 00
Wm. N. Noyes	221	5	75 00
Chas. C. Phillips	63	5	75 00
Benjamin Starr	229	1	15 00
Mrs. Margaret Robie	226	5	75 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of April, 1867, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Olney & Co., auctioneers, at Nos. 418 and 420 Clay street, San Francisco, California, on Monday, the seventeenth day of June, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. B. STEVENS, Secretary.  
Office, 418 and 420 Clay street, San Francisco. jel

**Lyon Mill and Mining Company, Kelsey District.** El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of May, 1867, an assessment of three (\$3) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner of Washington and Sansome streets. jels

**Lady Franklin Gold and Silver Mining Company.** Silver Mountain Mining District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of May, 1867, an assessment of thirty (30) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 305 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. S. LUTY, Secretary.  
Office, 305 Montgomery street, Rooms 5 and 6, San Francisco, California. my4

**Monnt Davidson Gold and Silver Mining Company.** Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. PARLOW, Secretary.  
Office, 121 Sutter street, San Francisco, Cal. my25

**Nuestra Senora de Guadalupe Silver Mining Company.** Tayoltita, San Dimas District, Durango, Mexico.

The public is herewith cautioned against buying or negotiating the following described Certificates of Stock in said Company, to wit: Issued to H. Bruening, No. 96, 5 shares; to Wm. Gelmann, Nos. 105, 107 and 108, each 10 shares; and Nos. 109, 110, 111, 112, 113, each 5 shares; to Chas. Schumacher, No. 47, 5 shares; and No. 51, 15 shares; and to La Abra Silver Mining Company (New York) No. 155, 550 shares, as said Stock has been sold for delinquent assessment (No. 25) at public auction, on Wednesday, May 15th, 1867.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco. my18

**Nuestra Senora de Guadalupe Silver Mining Company.** Location of Works: Tayoltita, San Dimas District, Durango, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of May, 1867, an assessment (No. 27) of one dollar (\$1) per share was levied upon the assessable capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, E. J. Pfeiffer, at the office, No. 210 Post street, or to the Treasurer, A. H. Melman, at his office, No. 637 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the tenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco. my25

**Office of the Providence Mining Company.** Notice.—The Annual Meeting of the stockholders of the above Company, for the purpose electing Trustees, and transacting other necessary business, will be held at the office of the Company, No. 5 Government House, San Francisco, on the TWENTIETH DAY OF JUNE, 1867, at 2 o'clock P. M., of that day.

F. T. FOLSOM, President.  
J. M. BURRIS, Secretary.  
San Francisco, May 27, 1867. jels

**Rattlesnake Gold and Silver Mining Company.** Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, 318 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-seventh day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

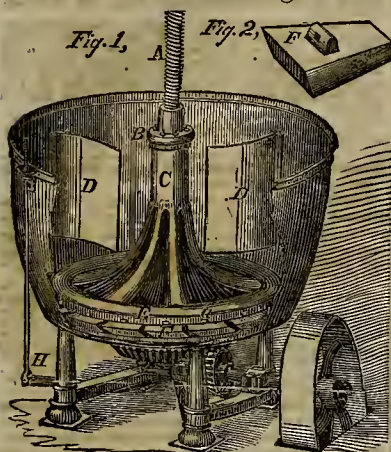
JOHN F. LOHSE, Secretary.  
Office, 318 California street, up-stairs, San Francisco. m25

**Santon Mining Company.** Location of Works: Drytown, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of one hundred dollars per share was levied upon the capital stock of said Company, payable July 5th, 1867, in United States gold coin, to the Secretary, at his office, No. 50 Exchange Building, San Francisco, California.



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

**Is the Cheapest and Quickest Pan**  
Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Solders made on the same principle excel all others—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
**PACIFIC FOUNDRY,**  
1st San Francisco.

## FOR SALE!

**PATENT RIGHT OF  
HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known.

Apply to  
**E. O. HUNT,**  
128 SECOND STREET,  
11v24 San Francisco.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the  
**HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, talcums, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.  
1v14-3m JAMES HITCHENS.

NELSON & DOBLE,  
AGENTS FOR

**Thomas Firth & Sons' Cast Steel, Files,**  
Etc., Shear, Sprung, German, Plow, Blister and Toe Calk Steel, manufacturers of  
**Mill Picks, Sledges, Hammers, Picks,**  
Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,  
319 and 321 Pine Street,  
Between Montgomery and Sanson, San Francisco.  
1v14q

## SAN FRANCISCO BRUSH FACTORY,

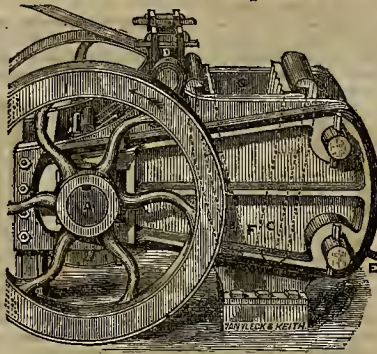
No. 211 California st., manufactures to order all kinds of

## BRUSHES,

At lower prices than cost of Eastern Importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fibers; also, Sledge Brushes from the same material. The Patent Batan, Street, stable, Flue and Furnace brush, for which they have the exclusive right for the Pacific Coast.

All orders from the interior promptly executed.  
**FELDMAN, SIMPSON & CO.,**  
1v14q, Proprietors.

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

**BRODIE'S PATENT IMPROVED QUARTZ CRUSHER.**  
The invention of all interested in Mining is respectfully called to this Improved Machine for Breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:  
No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$600  
No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour.....\$850  
No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.**  
The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wooden frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movement of the revolving jaw, B, and the dotted line shows the eccentric shaft by which the power is applied direct to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the jaw, F, which can be regulated at pleasure, so as to graduate to the size to which it is intended the quartz shall be crushed. C represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County:—

Rawhide Ranch, Tuolumne Co., Sept. 28, 1886.  
JAMES BRODIE, Esq., San Francisco.—My Dear Sir: I feel much pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which has entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,  
Supt. Rawhide Ranch Quartz Mill.

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATOR.** This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1884. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1886, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

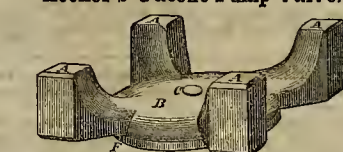
The following testimonial respecting the effectiveness of this Crusher, with explanation of its machine, will be found in the "Mining and Scientific Press," of September 29th, 1885.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1886.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street, San Francisco.

## Hooker's Patent Pump Valve.



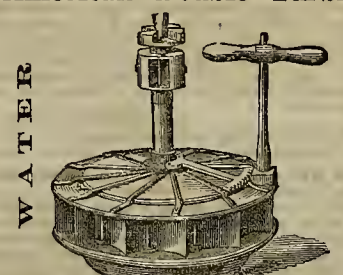
A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C.

The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the arrest for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, are for sale by  
**V. CUSHING,**  
120 Front street, San Francisco.

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

See illustration and description of this Pump, published every other week in this paper.

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

CALIFORNIA REFERENCES.—E. Stockett, Polson; O. Simons, Oakland (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. Y. McLean, Lexington, Santa Clara County.

Send for Circular to  
**KNAPP & GRANT,**  
Agents for California.  
26v13-1yq 310 Washington street, San Francisco

## Hunt's Globe Pump



Is extensively employed for raising water by hand or wind-mill power, for house or garden uses. I manufacture five sizes, from 3 to 10 inches diameter in the chamber. These Pumps are all fitted for iron or lead pipes. They are very durable and easy to repair.

No. 3—3-inch Chamber, 6-inch Stroke.  
No. 4—4-inch Chamber, 6-inch Stroke.  
No. 5—5-inch Chamber, 8-inch Stroke.  
No. 6—6-inch Chamber, 8-inch Stroke.  
No. 7—7-inch Chamber, 10-inch Stroke.

Manufactured at No. 28 Second street, and 110 Jessie street, San Francisco, by E. O. HUNT, Windmill Builder.  
12v14f

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco.

## QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

## First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or  
**J. B. HITCHCOCK,**  
19v14-3m Millwright, Russ House.

## DUDGEON'S

## PATENT

## Hydraulic Lifting Jacks

—AND—

## BOILER PUNCHES,

16v14 Eighth street, cor. Minna. qr

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—or—

## WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## STRONG &amp; CO'S

## CELEBRATED UNION PAN!

A fast Grinder and thorough Amalgamator; has double Mullers, Rolling Shoes and reverse action.

Millmen and others are respectfully invited to examine this Pan, before purchasing others, as it gives the best satisfaction. Can be seen in operation, daily, at the San Francisco Foundry, Fremont street, near Mission.

Ores, in lots not exceeding 2,000 pounds, tested by  
22v13 C. W. STRONO, Assayer.

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

## PRICES REDUCED!

These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, with copper ammunition; Police Revolvers, a new model, navy size ball,  $\frac{1}{2}$  to 6 inch barrel; Rifle Cases—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Case. All the new models for sale very low.

12v13f

**ALBERT E. CRANE.**

## To the Mining Community.

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS' constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 851 Harrison street, San Francisco.

**WILLIAM WILLIAMS,**  
Practical Mining Engineer.

**THE SOAP ROOT TRADE.**—We have made frequent allusion to the recent introduction of soap root as a substitute for pulu and curled hair in the manufacture of mattresses. The Dutch Flat Enquirer gives the following interesting information with regard to the extent and mode of this new branch of manufacture, which bids fair to assume no inconsiderable importance:

There is dug out of our mountain soil a better material for beds than is now available in the markets of the world. It is next to, if not fully equal to, curled hair for comfortable, useful and healthful beds. On little Bear river, a mile from Dutch Flat, a factory has been built seventy by thirty feet, which is soon to be enlarged to twice its present capacity. Twenty-two men are now employed. The material manufactured is the soap root, which grows in unlimited quantities in this region. It is a bulbous root, enveloped in a very tough and subtle fiber, resembling somewhat the husk of the coconut in color and appearance, but nearly as tough as whalebone. The roots are dug chiefly by Chinamen, bound in bundles of 100 pounds each and brought on poles to the factory. At \$1.50 or \$2 a day, they have lately rushed in with a larger quantity than the present capacity of the mill demands, and the market is glutted and sales have stopped for the present. The first work is to put the roots through a picker, similar to a threshing machine, which is run by horse power. This separates the fiber into a hair of eight or ten inches long, which is placed in a large vat or steamer till it becomes flexible and is freed from all gummy or glutinous matter. It is then dried on flats in the sun, put through another finer picker, turned by a Chinaman, then taken and twisted into ropes, as at a common rope-walk, then steamed again, which sets the curl. The ropes are then bound in bales, and are ready for market. The natural color is brown, but if colored black, as it can easily be, it will take an expert to tell it from the best curled hair. But the Eureka Hair Company have also in town a mattress factory, which is supplying the region with beds. The present capacity of the factory is limited to about 1,000 pounds a day, but the proprietors will be compelled to enlarge just as soon as upholsterers learn the value of the material, and they will be obliged to furnish it the moment the public generally learn the superiority of the Eureka hair over all other available materials for beds.

The carelessness of miners is almost proverbial. A late English paper enumerates the following remarkable instances of recent occurrences in that country: One man was killed by an explosion caused by lighting a fuse over a barrel of powder. In another case a miner who had lit the fuse of a blast in the face of a tunnel retired to the entrance, a distance of 100 feet, to await the discharge, of which he was soon made aware by the reception of a blow on the back of his head from a stone weighing seven pounds. At Maldon, two casks of powder and a number of drills were being lowered down a shaft in a bucket; the ascending bucket caught the other, and tilted it, so as to upset its contents. The casks burst, the drills struck fire, and the powder exploded. A boiler exploded the other day at Maryborough through letting in cold water at the time the boiler was empty. No regular engine driver was engaged, and the man in charge, in spite of being cautioned by a competent person standing by, who saw the danger of what he was about to do, deliberately did it notwithstanding, and his own and the life of another were the sacrifice.

**A NOVEL LEAD PIPE CLEANER.**—The *Rural New Yorker* says that Mr. Stephen Toby of Caton, New York, recently found that his lead pipe through which his house was supplied with water, had got stopped up with sediment from the spring, and he could devise no way to clean it—was on the point of taking it up and replacing it with a new one, when it occurred to him to employ a natural aid. He caught a slate colored lizard, common about springs and among stones, took the strainer from the upper end of the pipe and thrust the animal in head first, putting on the strainer again. Mr. Lizard could not back out; neither could he turn round—the pipe being only five-eighths of an inch in diameter. He must propel; and he did, at the rate of three or four feet per minute, emerging from the lower end of the pipe heralded by the muddy sediment and followed by a stream of spring water, which has continued to flow uninterrupted since. Perhaps the suggestion may be useful to somebody.



**REFUSING THE HONORS.**—Queen Victoria a few years since, offered to confer the honor of knighthood upon William Fairbairn, at the time President of the British Association for the Advancement of Science, but he declined the honor. Offers of knighthood have been made and refused by several of the distinguished mechanics and men of science in Great Britain. James Watt refused knighthood, as did Robert Stephenson and Michael Faraday. The latter, like Fairbairn, commenced life as a poor mechanic, and worked up to the head of his profession; is an honorary member of the Institute of France, Fellow of the Royal Society, an able author on engineering subjects, and is the inventor of the cellular hollow girder system, upon which the Britannia tubular bridge is built. Titles conferred by royalty cannot add to the honors of such men; they look upon them as mere baubles.

**POISONOUS THREADS—CAUTION.**—A late French journal states that a number of seamstresses have suffered from violent colic, in consequence of putting into their mouths the silk they use in sewing. This disease is attributed to the practice of mixing the silk with a preparation of lead (the sulphate) so as to increase its weight. A chemical analysis of many different samples of sewing silk has been made by Mr. Jones of the Chemical Laboratory, Leadenhall street, London, which resulted, in almost every case, in the detection of large quantities of acetate, or sugar of lead. This admixture is even more dangerous than that of the sulphate, on account of the greater degree of solubility of the sugar of lead in the fluids of the stomach.

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press, or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v14tr

#### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

#### Illuminating, Lubricating, AND PAINT OILS!

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

#### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning oil. A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

#### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 414 Front street, San Francisco. 1v13m19

#### California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY.  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff. Office of the Company, northeast corner of Front and Jackson streets.

JOHN BENCHLEY, President.

#### EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

#### WOOD AND COAL,

No. 513 Bush-street, between Dupont and Stockton 1v146m SAN FRANCISCO.

#### ISAAC LOBREE & CO., GOLDEN STATE POTTERY, ANTIOCH, CAL.

Office in San Francisco, 516 Commercial st. Constantly on hand a large assortment of Earthenware, Fire Bricks, Fire Clay, and Stoneware. Is prepared to fulfill all orders at the shortest notice. 2v14tr

#### GOVERNMENT HOUSE,

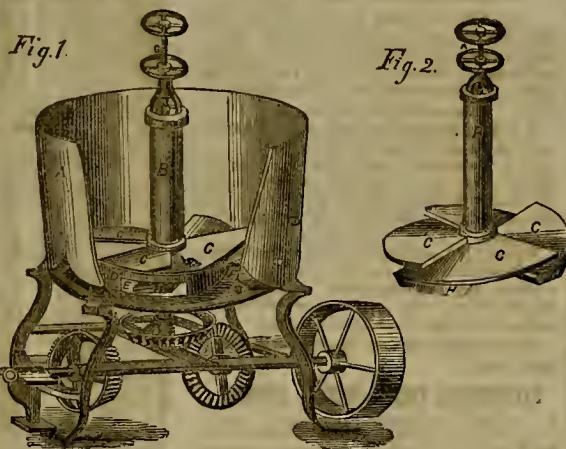
Corner of Sansome and Washington sts. SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a restaurant attached for ladies and families, where persons can board for one-half day they are required to pay at hotels. 1v156m SANBORN & CO

## Gaston's Screw Grinder and Amalgamator

—18—  
The Best Yet Invented.

For rapidity and thoroughness of work, the machine above illustrated is unequaled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw muller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the muller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the muller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is effectually rubbed by the shoes, while the screw, being constantly fed by the pulp from above it, presses all under the muller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr



Stair Work of all Kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.

**N. P. LANGLAND, STAIR BUILDER,**  
No. 49 Beal street,  
Between Market and Mission,  
SAN FRANCISCO.  
1v14-1y

Newel Posts and Balusters  
CONSTANTLY  
On Hand and for Sale.

**THE CELEBRATED Self Generating Portable Gas Lamp.**

This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivalled, burning with undiminished brilliancy in a strong wind.

Directions for Use.

Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to generate the gas, which will be seen issuing from the top. The fan must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.

A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.

When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.

Manufactured solely by JOHN J. HUCKS, original proprietor. Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State. 1v14-3m

**HEALTH! HEALTH!**

No more Typhoid, or other Deadly Fevers

**Taylor's Stench Traps and Garbage Baskets,**

To prevent this, purchase one of

**Taylor's Stench Traps and Garbage Baskets,**

And promote the health, comfort and cleanliness of your family. (For description see Mining and Scientific Press, April 6, 1871.) Sold wholesale and retail by TAYLOR & SONS, at No. 420 Pacific street, San Francisco. 1v14tr

**CUT NAILS.**

2,000 KEGS ASSORTED SIZES,

For sale in any quantity, to close invoice, at the very

Lowest Rates, by

**THOS. H. SELBY & CO.,**

116 and 118 California Street,  
SAN FRANCISCO. 1v14 3m

**Notice to Miners, Well-Borers and Water Companies.**

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

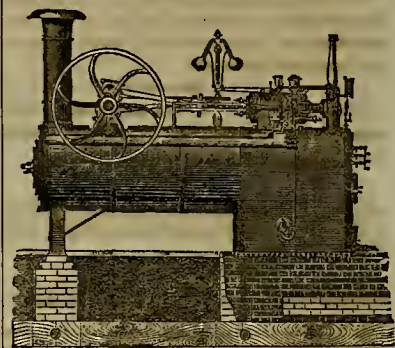
M. PRAG,  
5v13-1y Stove Store, No. 123 Clay street, below Davis.

## Portable Steam Engines!

"Hoadley's" and "Hittinger's" Make,



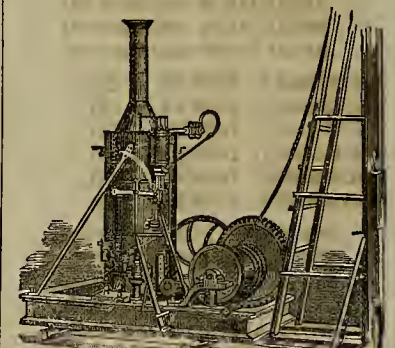
**HOADLEY'S.**  
FOUR SIZES,  
8, 10, 12, and 15-Horse Power,



**HOADLEY'S.**  
3 to 40-Horse Power.



**HITTINGER'S.**  
THREE SIZES,  
5, 7, and 10-Horse Power



**HITTINGER'S.**  
TWO SIZES,  
5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for bolting, pumping, threshing, milling and mining purposes.

Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery, and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the miner's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the uttermost confines of civilization the saw and grist mill, and it has done and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

All sizes on hand from 3 to 30 horse power, with and without carriages.

Also, Portable Saw and Grist Mills.

For sale by

**TREADWELL & CO.,**  
5v14-6m15p Corner of Front and Market streets.



**DEEP CRATERS.**—It is said that there are three extinct volcanic craters near Red Mountain City, in Montana, which are so deep that the light is entirely excluded from their depths, and that when a stone is thrown into them no sound can be heard of their reaching the bottom!

**WORKERS IN DEMAND.**—Mr. Charles S. Eaton, employment agent, opposite the plaza, informs us that there is an unusual demand for laborers of various classes at present, he alone having orders for over 200 men for different occupations.

**MR. ORLANDO JENNINGS**, recently of Butte county, is about establishing himself in the assaying business in Downieville. He will thus locate in a rich field for prospecting.

**COMMUNICATIONS RECEIVED.**—"The Formation, Distribution and Age of the Igneous Rocks," by F. A. Herring; "Letter from Europe," by A. S. H.

**WOODWARD'S GARDENS.**—It will be seen from the advertisement which appears to-day, that new attractions are being continually added to the variety heretofore presented.

"**SUB-POSITORY**" is the name of a new remedy for the afflicted, advertised to-day by C. Wood, No. 63 Tehama street.

**By Express.**—Two cents per copy will be added to our usual rates of subscription (to pay Wells, Fargo & Co.'s tariff on papers sent by express. If connecting expresses in the interior make additional charges, subscribers must them; solves settle the same.

**Cholera.**—Perry Davis' Vegetable Pain Killer.

Mr. PERRY DAVIS, Sir:—The benefits I have received from the use of your invaluable remedy, the Pain Killer, induces me to pen a word in its praise. Experience has convinced me that for Headache, Indigestion, Pain in the Stomach, or any part of the system, severe Chills, Weariness, common Colds, Hoarseness, Cholera, Cholera Morbus, Diarrhoea, Dysentery, Toothache, etc., there is nothing better than the Pain Killer. I have this hour recovered from a severe attack of the Sick Headache, by using two teaspoonfuls, taken at thirty minutes interval, in a wine glass full of hot water. I am confident that through the blessing of God, it saved me from the cholera during the summer of 1843. Travelling amid dust, toil, change of diet, and constant exposure to an infected atmosphere, my system was daily predisposed to dysentery attacks, accompanied with pain, for which the Pain Killer was a sovereign remedy, one teaspoonful curing the worst case in an hour, or, at most, half a day! I have heard of many cases of Dysentery being cured by its use. Put in the teeth, will stop the toothache. Gratitude, and a desire for its general use, has drawn from me this unsolicited testimonial in its favor.

D. T. TAYLOR, JR., Minister of the Gospel.

Sold by all Medicine Dealers everywhere. 22v15-1m

## CHICKERING & SONS'

### PIANO FORTES

Never fail to stand any climate.

The only Perfect Pianos

They lead in all valuable improvements—all others follow.

Agents: KOHLER, CHASE & CO.,

421 Montgomery street, b. t. California and Sacramento.

ly10v14nrl9p

SEND YOUR ORDERS TO  
SEND YOUR ORDERS TO  
SEND YOUR ORDERS TO  
SEND YOUR ORDERS TO  
SEND YOUR ORDERS TO  
SEND YOUR ORDERS TO

TRUESDELL, DEWEY & CO.,  
TRUESDELL, DEWEY & CO.,  
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TRUESDELL, DEWEY & CO.,  
TRUESDELL, DEWEY & CO.,

BOOK AND JOB PRINTERS,  
BOOK AND JOB PRINTERS,  
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MINING & SCIENTIFIC PRESS OFFICE  
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MINING & SCIENTIFIC PRESS OFFICE  
MINING & SCIENTIFIC PRESS OFFICE

O. P. Truesdell, having this day become associated in the business of the MINING AND SCIENTIFIC PRESS JOB PRINTING OFFICE, the same will hereafter be conducted under the firm-name of "Truesdell, Dewey & Co." at the old place, No. 503 Clay street. With additional new material and the best of workmen employed, we can guarantee entire satisfaction to all old and new customers.

TRUESDELL, DEWEY & CO.

San Francisco, April 15, 1867.

## Excelsior Double-Acting Suction and Force Pump.

The Best for Mining, Farming and Domestic Use.

Hooper's Patent, Aug. 15, 1865.

THE EXCELSIOR PUMP is a California invention of intrinsic merit, and as such is being rapidly introduced, and giving perfect satisfaction. At the Mechanics' Institute Fair (1865), it was awarded, for its superiority, a

Premium Medal.

It is manufactured by California Mechanics, in the most perfect and durable manner.

It is remarkably simple in construction, and its valve chest is almost instantly accessible without disconnecting the air-chamber, suction or discharge-pipes. It can be worked at any speed.

Figure 1 is a sectional view of a 6-inch Mining Pump, showing the plunger and hem-packing, and the valve-chest containing the puppet valves. Fig. 2 illustrates the water-passages and valve seats in the chest.

The following sizes are constantly manufactured of this

### SUPERIOR DEEP-WELL PUMP.

No. 1—Cylinder 2½ inches; stroke, 6 inches; capacity 750 gallons per hour; weight, 60 pounds.

No. 2—Cylinder, 3 inches; stroke, 7 inches; capacity 1,200 gallons per hour; weight, 80 pounds.

No. 3—Cylinder, 4 inches; stroke, 8 and 5 inches; capacity, 2,500 gallons per hour; weight, 200 pounds; with iron frame and slide complete.

No. 4—Cylinder, 5 inches; stroke, 15 inches; capacity 5,420 gallons per hour; weight 800 pounds.

No. 5—Cylinder, 6 inches; stroke, 24 inches; capacity 12,375 gallons per hour; weight, 1,000 pounds.

Nos. 3, 4 and 5 are

made to endure the severe test of use in mines, and are constantly superseding those of other manufacturers. The pistons being packed with hemp, are proved to be far more durable and less expensive than leather.

We manufacture to order 8 and 10-inch Pumps. Also, sell at cheap rates, 5 and 6-inch Brass Pumps for ships.

See illustration of the Valve of this Pump, and further description, in another part of this paper.

For Circulars, or further particulars, inquire of J. W. BRITTON & CO., Agents, 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or

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Wood & Mann's Portable Steam Engines, 6, 8, 10, 12 and 15 horse power,

With newly invented Water Bottom, which entirely surrounds the fire, grate and ash-pit, forming underneath the ash-pit, as up the sides of the furnace, a three or four inch water space, by which additional heating surface is obtained, the accumulation of sediment around the fire-box or furnace is entirely prevented, and renders it perfectly safe to use near any barn, or in any farm yard, or in any building where a stove would be allowed, as no sparks can possibly escape from the furnace or ash-pit. The sediment has a free passage to the bottom of the fire box, and can be blown off daily by the blow-off cock underneath the ash-pit by which means the Boilers may be kept clean much longer than under the old system. The great saving in repairs which is effected by the use of these water bottoms, and the constantly increasing demand for them, prove their superiority to any others yet constructed.

HOADLEY'S THRASHING ENGINES.

HITTINGER & RAWSON'S IMPROVED HOISTING ENGINES, 6, 8, 12 & 20-horse power.

FOR SALE BY

BAKER & HAMILTON,

Front St., bet. Pine and Market, San Francisco.

J STREET, NEAR THE LEVEE, SACRAMENTO.

13v14-1f

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

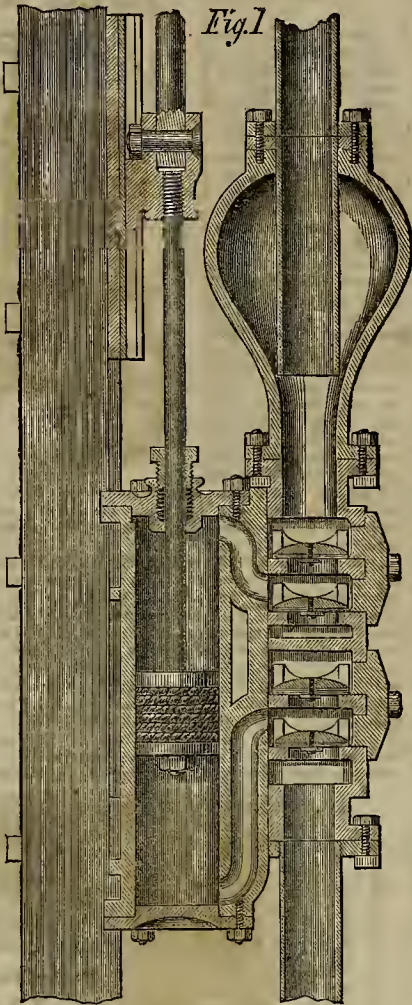
Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18



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13v14-1f

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

## W. T. GARRATT, City BRASS AND BELL FOUNDER

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When the 10th, 19th and 30th fall on Sunday, they will leave on Saturday preceding; when the 18th falls on Sunday, they will leave on Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

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Departure of 10th connects with English steamer for Southampton and South America, and P. R. R. Co's steamer for Central America.

The following Steamships will be dispatched on dates as given below:

June 18th—GOLDEN CITY.....Capt. Jas. T. Watkins. Connecting with ARIZONA, Capt. Harris.

June 29th—MONTANA.....Capt. Jos. Sutton. Connecting with OCEAN QUEEN, Capt. Maury.

Cabin passengers berthed through. Baggage checked through—100 pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets for Liverpool by the Cunard, Inman and National Steamship Lines can be obtained at the office of the P. M. S. & Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARCO & CO.

The COLORADO will be dispatched July 4, at noon, and will be followed by the GREAT REPUBLIC on August 24th, from wharf, corner of First and Brannan streets, for YOKOHAMA and HONGKONG, connecting at Yokohama with the steamer COSTA RICA for SHANGHAI.

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OLIVER ELDRIDGE, Agent.

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And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JUNE 22, 1867.

VOLUME XIV.  
Number 25.

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THE MINES OF COLORADO, by O. J. Hollister (late editor and proprietor of the Colorado Mining Journal). Springfield, Mass.: Samuel Bowles & Co.

We have received from the author a copy of the above work, which consists of a well written and finely-printed volume of 450 pages, descriptive, as its title imports, of the mines of Colorado. Mr. Hollister prefaces his work by an allusion to the near approach of the iron rail, from both the east and west, to that somewhat famous locality, by means of which it will at once become accessible from all parts of the country. Its situation in a pleasant and healthy climate, its position on the immediate line of one of the world's great thoroughfares, embracing within its limits great mineral and agricultural wealth, together with other important industrial advantages, the author thinks most eloquently invites settlement and improvement from the more crowded centers of population at the East. It must also become a famous and delightful summer resort for the New if not the Old World. Its cool, bracing and eminently pure air, its medicinal springs, its grand and beautiful scenery, and its abundance of game, must render it particularly fitted for such resort. The main object of the work, it is claimed, is to spread before the world such information with regard to that Territory as is proper in view of its claims and prospects. The work treats very elaborately upon the discovery there of gold and silver, and the subsequent settlement and development of the country—its geography, geology, mineralogy, agriculture, government, society; the progress of its mining industry, its mills, machinery, methods of treating ores, etc. The writer has done his work well—unless it may be a little overdone, a fault almost impossible from the nature of the hook and the circumstances under which it has been written. Mr. Hollister is evidently enthusiastic, and has the fullest faith in a great future for Colorado.

CORRESPONDENTS, to secure attention, should always send us their real names. We frequently receive anonymous letters, which would be used were they accompanied by the real name of the writer; but which, from the lack of that, go to the waste basket.

## The Oakland College School.

A few words concerning the peculiar nature and system of instruction of this well-appointed institution may not be unacceptable to our readers. During the past few years great improvements have been wrought, both in the system of instruction at this school and in the facilities for applying the same. It stands now a perfectly graded school, and compares favorably, in this respect, with our perfected common school system. It has three distinct departments, with their own teachers, recitation rooms and dormitories—the junior, senior English and senior classical. The separation of juniors and seniors combines the two-fold advantage of keeping the small boys from mixing too much with the young men, and of affording a constant means of emulation on just principles. With such a system, it is a great advantage for a young boy to attend a large school where there are many older than himself. Since the school is necessarily, in some respects, a preparatory step toward the college course, the senior classical department is designed chiefly for those who intend to complete their education in college. This is under the care of George Tait, A. M., former Superintendent of Public Schools in San Francisco. The senior English covers a wide range of study, suitable for those who desire to receive only a liberal education for practical science or business. This department is under the care of Assistant Principal F. M. Campbell, A. M. Here, besides the usual higher English branches, much attention is paid to book-keeping, etc. Surveying and civil engineering are practically taught in field excursions. The business department will probably very soon be enlarged, and one of the college school halls he appropriated to active business, with all the necessary apparatus. A systematic course of lectures will be obtained in the various departments. When these arrangements can all be made, and when the contemplated improvements in buildings, reading rooms, grounds, etc., are completed, the college block, which contains eight acres of land, well shaded by noble oaks, will become an object of beauty and interest to the public not to be excelled by any place of public resort in the State.

It is somewhat pleasant to observe the characteristics of the students, among themselves, in this cosmopolitan school. The advantage gained by sending a son where the thoughts and experiences of students from Washington Territory and Idaho, from Nevada, Mexico and the Sandwich Islands, are intermingled with the fertile minds of those from every county of California, is incalculably great, and worth a thousand times the seeming advantage of an Eastern education. And here let us state the fact that the graduates of our colleges on the Pacific coast who are studying in professional schools in the East and in Europe, carry such prestige with them, on account of their having been educated in this young, but opulent orient, that they become doubly successful in their professions, and receive a greater share of attention from the public.

## California at the Paris Exposition.

A telegraphic despatch from New York, of Liverpool date of the 6th inst., says that the Paris correspondent of the *Times* complains that California hardly makes an effort at a display of her mineral resources. "Her free gold is barely represented, and no adequate idea of her resources can be formed from it.

The above result is what was expected and foretold by several of those who were most actively engaged in arranging the details in this city, for California's share in the Exposition. The "Exposition Committee," after due deliberation, published an address setting forth what was needed in order to secure a proper representation of our interests and resources at the World's Exposition, which address was followed by an appeal for the funds requisite to make the necessary mineral collections, arrange and classify the same, and print and publish such information as would make our exhibition useful and valuable. If the exhibition proves a failure, it will not be the fault of the committee who had it in charge, or the Commissioner who goes to Paris at his own expense, to represent the great State of California at the World's Fair. The collection of specimens, forwarded by Dr. Dupertren, we presume, is the "display" of minerals alluded to in the telegraphic dispatches. That collection cannot be of any practical use as an index of the extent or value of our mineral resources, by reason of its utter want of classification and description. How far Prof. Blake will be able to remedy this deficiency, upon his arrival there, which will be about this time, we shall soon learn. The Professor, we believe, took with him a private collection of his own, with such additions as he could make, at his own expense, and in the limited time allowed him.

It is greatly to be regretted that California, which is generally liberal in every important work, whether of a public or private nature, whether of State interest or in aid of philanthropic efforts, should have neglected, in this instance, to furnish the pecuniary means by which alone success in anything of this kind can be accomplished.

ROYALTIES IN MINING.—Quite a number of Eastern inventors have endeavored to introduce patent processes and machinery for a royalty on the increase of gold or silver which may thereby be obtained. Nobody has ever sold a right on any such condition, and no one over will sell such a right in California. The very fact that parties are trying to effect such sales is the best evidence that they know nothing about mining on this coast. The thing is impracticable—utterly so. The sooner inventors, with such notions in their heads, stop expenses of advertising and printing, with such an end in view, the better will it be for their purses. If an Eastern or any other inventor has anything really valuable to sell, in the way of saving gold or silver, he can readily find purchasers in California, if liberal and practical terms are offered; but not otherwise. Californians are practical men, eminently so.

SODIUM AMALGAM.—John Taylor & Co., at 512 and 514 Washington street, are now in the regular receipt of sodium amalgam direct from the establishment of Mathey & Co., London, put up in packages of from one to twenty pounds of twenty-five per cent. sodium. The amalgam of this strength is sold at \$2.50 per pound, by twenty-pound packages, and \$3.00 per pound in single pound packages. They have also the amalgam manufactured in this city, of five per cent. strength, which they sell for \$1.75 per pound by the quantity.

Sodium amalgam is slowly coming into use; much more slowly, however, than its merits as an aid in gold saving would seem to warrant. When used with judgment, there can be no doubt of its value. We see it stated that it is giving good satisfaction at the San Juan del Rey Gold Mining Company, in South America, and in the Real del Monte, of Pachuca, one of the largest silver mining companies in Mexico. The sodium amalgam imported from London is claimed to be far superior to any before offered in this market. It is manufactured under the British patent of Wm. Crookes, Esq., F.R.S. A pamphlet, entitled "Observations on the Process of Extracting the Precious Metals by means of Sodium Amalgam," can be had on application to Messrs. Taylor & Co.

SCIENTIFIC EXPLORATIONS.—Prof. Whitney, State Geologist, left on the steamer on Monday last for Oregon, whither he goes for the purpose of making a scientific exploration of Mount Hood and vicinity. There seems to be quite an unusual call, of late, for scientific explorations on this coast. In addition to the heavy work of the Geological Survey of this State, Prof. Gabb has just returned from quite an extended scientific exploration of Lower California, and has again left, as elsewhere stated, for the exploration of the southern portion of the State of Nevada. Prof. Kellogg, as we have already stated, is about to start for our newly-acquired possessions toward the North Pole; and the party under the direction of Prof. King are well on their way to explore the line of the Central Pacific Railroad. The desire for reliable information of this kind is on the increase, and augurs well for the future progress of the growing empire of the west.

THE State Agricultural and Mining College has been located, by order of the Directors, in Alameda county. The vote stood, four for Alameda, two for Napa. The precise point of the location has not yet transpired. We presume, however, that it will be somewhere between the point where the Telegraph road strikes the foothills and the future site of the College of California. The Deaf and Dumb Institute has been located in that vicinity. We have already fully expressed our opinion with regard to the propriety of that location.

PICNICS.—All in search of health, pleasure, or recreation, will find Woodward's Gardens one of the most desirable places of resort this side the garden of Eden.



## Communications.

IN THIS DEPARTMENT we invite the FREE DISCUSSION of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## Letter from London.

BY A. S. HALLIDIE.

MESSRS. EDITORS:—A flying trip through the Old World, among its shops and manufacturing, its mines and quarries, its railways and water-courses, its churches and theaters, scarcely enables one to properly note the changes which have taken place within the past fifteen years.

The railway system has been greatly extended, especially in England, and most of all, in London. It there runs through the streets, and under and over them—crossing the river Thames by numerous bridges, where, fifteen years ago, there were none, and almost taking one from the door of his house and landing him, in a few minutes, in the city. I remember very well the crash and jam of carriages and people that used to occur every day on Fleet street, before the extension and completion of these lines; and now, with a population increased by nearly one million, Fleet street is not so crowded as it was then. The cause is obvious; and some such method must be adopted to relieve Broadway of the immense traffic and crowd thrown upon it near Maiden Lane. I do not think Fleet street could beat Broadway much in its busiest days.

## LONDON RAILWAYS.

The Metropolitan Railroad, or, as it is usually called, "the underground," is a matter not only of convenience, but of necessity; and its success in London, where it had to encounter so many expensive difficulties, in the cutting of main sewers, vested rights of property-holders, and the opposition of omnibus and cab-owners, (although it was generally regarded as a good joke, and its failure predicted) besides having branches to build off from the main trunk, is sufficient evidence of the success which would attend such a road in New York, if economically built and managed. The long, narrow form of the business part of that city would require but one trunk, which would command the entire business.

The other line in London, so convenient to business men, is the Charing Cross—Cannon Street Railway—which, starting from where Hungerford Market used to stand, crosses the river Thames over a lattice bridge which has supplanted the old chain suspension bridge (which latter is now erected across the classic Avon, at Clifton), runs across the river to the south side, stopping on the way at Black Friars, recrosses the river at another iron lattice bridge, and lands you at Cannon street, just six minutes from the time of starting, giving you a return ticket, second class, for 12c. Trains leave each end every ten minutes.

## A GREAT RAILWAY CENTER.

Let us go out to Clapham Junction. Here we see an accumulation of lines running in all directions, which sadly confounds confusion. This is the converging point of the south coast trade, and the whistle of the locomotive is always shrieking, while the arms of the signal stations are apparently thrown up wildly and in despair; but yet in the hurly burly, the scream and the rush and the throwing up of signal arms—all goes on well; but the eye gets tired of leaping from line to line, as new trains make their appearance from points least expected. Usually at this junction there are eighty trains per hour passing over the rails; and yet, with all this hurry and bustle, the officials are civil, as far as I have found, from the top down, and certainly, from the many questions put to them by scared old ladies or swell-headed young gentlemen, it strongly conveys to my mind the fact that patience is a virtue.

## STEAMERS ON THE THAMES.

The little steamers on the Thames, which carry passengers so cheap, are good specimens of how to wiggle your way through difficulties, or a crowd; and it is still more singular when we consider the poor facilities the captain and helmsman have for rapid action. If the captain wants to go slower, he motions to a small boy, who deliberately sings through his nose, "ease har!" or to go ahead, "mov-ve a-a-r'ead!" while the man at the wheel is clear aft, and watches the motion of the captain's hand; but yet they get along finely without accident.

## THE THAMES BRIDGES.

It is marvellous to note the number of bridges which have been built across the Thames within the past twelve years. One or two are very handsome, especially the new Westminster Bridge, which, to my eye, is the most beautiful one I ever saw. There are seven elliptic arches; being built with cast iron ribs, it has a very light crown and elegant balustrade. This structure was designed by a Mr. Page, and is a credit to him and an ornament to the river. There is also a very pretty and unique suspension bridge at Chelsea, designed by the same engineer. At Lambeth there is a structure which would not be considered very creditable even in California. It is a suspension bridge, but possesses neither architectural beauty nor fine lines. The roadway is out of adjustment, and the general appearance of the work is as if it had been put up cheap. Now a river, like the Thames, running through the largest and most wealthy city in the world, should possess structures somewhat in keeping with the means and position of the city; but the stream has heretofore been allowed to run its own course, in every sense of the word, until the senses, especially of seeing and smelling, rose in rebellion against Father Thames being used as a common sewer, without being open to be sued.

## THE EMBANKMENT OF THE THAMES—AN IMPORTANT IMPROVEMENT.

The matter of improving the river has recently been taken hold of, and there is now to be seen gradually rising upon each side of the river an embankment, fine in design, solid in workmanship, and elegant in character of material. It will be, when completed, a wonderful improvement over the old mud flats, back-yard deposits of decayed vegetables, outlets of sewers, etc., which now meets the eye. The embankment is making progress, but the Londoners say *very slowly*. It is far advanced between Westminster and Waterloo bridges. These sections were to have been opened by the first of May, 1867, but this is out of the question. The delay in the opening of the first section is occasioned, to a great extent, by the dilatoriness of the Metropolitan Railroad company, who have the right of way under the embankment. The company, I understand, is not anxious to build the road underground at this point, thinking it can get a bill through parliament empowering it to build on the embankment—in fact, it is said that the railroad company has determined to commence work, if compelled to, only after the embankment is completed. As this will be so very unpopular, requiring its further tearing up and delay in opening, it thinks that there will be no difficulty in obtaining the right of way at some distance back from the water front.

## THE NEW BLACK FRIARS BRIDGE

Is progressing slowly, on account of the substratum of London clay having been scoured out to a great depth, by the action of the contracted current, in the piers already laid. A much greater depth has been required than for the old ones, and the contractor has already reached a depth of ninety feet before striking the compact clay. It is expected that two years further will be required; in the meantime a temporary bridge is being used, which is decidedly not ornamental.

## THE PNEUMATIC DISPATCH COMPANY

Have a considerable amount of piling in the river preparatory to laying its tubes, a full description of which I think you have already published.

Everywhere, throughout London, evidences of great improvement and tearing down, especially for railway extensions, seems to be the rage. There is one solid and necessary improvement to take place in the Strand; that is the widening of this thoroughfare near Temple Bar—the destruction of this bar, and the erection of magnificent law offices.

## The Reese River Country and its Mines.

BY A. J. HOWE.

[Continued from Page 370.]

## NORTHUMBERLAND DISTRICT

Is in latitude  $38^{\circ} 50'$ , fifty-two miles distant, in a south of southeast direction from Austin. From Blackbird Cañon, located a few miles east of Austin, our road follows south on the Belmont and Ophir Cañon stage road thirty miles, from whence we strike diagonally across the plain, in a southeast direction, for twelve miles, which brings us to the mouth of Steeple Cañon, named so from the vast number of steeple-like monuments that line its margin. These are composed of a stratified sedimentary rock, of quite recent origin, yet but imperfectly hardened, and probably formed in the following manner: The cañon, at no very ancient day, has flowed full of this substance, in a liquid state, from the mountains above. This flowing has apparently been gradual and periodical, as the strata alternate with the pulp abrasions of grayish slate, of which the mountains at the head of the cañon are composed, and white volcanic tufa, which forms the hills lower down, with an occasional stratum of perfectly smooth-washed pebbles. More recent washings have nearly cleared or worn out the channel as it was originally, leaving only islands and occasional masses along the border, which have been worn by the rains for ages into symmetrical forms, like steeples and monuments. The same thing occurs, on a grander scale, on the Upper Platte, in Nebraska (Chimney Rock and Scott's Bluffs), also in Utah (Steeple Rocks, or Pyramid Circle).

About seven miles up the cañon we come to an extensive meadow, out of which burst numerous springs. Here a large quantity of hay can be cut, and the spot is claimed for that purpose by Wm. N. Cummings, the pioneer of Northumberland. There is also a fine mill site here, owned by the Northumberland company, who have already erected a dwelling house.

Northumberland District was discovered in June, 1866, by Wm. N. Cummings and J. C. Merrill, from Mammoth District. The former returned in July, and discovered the famous Northumberland and Lady Cummings ledges. About the 6th of July, the district was organized, with Mr. Cummings as Recorder. The obnoxious State mining law then in force was adopted, and has not been since repealed by the miners, although it is no longer the law of the State. By this time about thirty prospectors had found their way here, and before August, twenty distinct lodes had been discovered, which number has been greatly increased since. Many of these were of wonderful richness. A considerable quantity of ore was taken to the Keystone mill, at Austin, in September and October. It was principally from the Detroit, Cedar Point, Northumberland, Lady Cummings, and Richey & Hussey lodes. The average working of all the lots reached full \$200 per ton, the highest working being from the latter—a lot of ten tons gave a yield of \$2,800, or \$280 per ton. The next was the Cedar Point—\$195 per ton.

As we ascend from Steeple Cañon, we come suddenly upon the massive croppings of the Northumberland, the great lode of the district. It is situated at the base of the highest peak in the vicinity, and crops out along the mountain for 1,200 feet. Its average width is twelve feet. It has been opened in five or six places, at intervals of one hundred feet, in every instance showing a fine body of ore. At one point a tunnel was run seventy feet; from this, ore was taken that yielded, by assay, \$430 per ton. Clippings taken along the entire length of the surface outcrop, with a view of ascertaining the average, yielded \$39 per ton. Another test of 800 pounds, taken from the same source, with very little selecting, worked at the Keystone mill \$69 per ton. The apparent dip of the lode is west into the mountain; but, like the great Comstock lode at Virginia City (which it closely resembles in many features of surface indica-

tions), I think its permanent dip will be to the east, and I will give one reason for this theory. A short distance east and lower down the hill a small chimney of extremely rich ore was found in August last, from which nearly \$3,000 was taken in a few days. This chimney gave no indication of a continuous lode, but appeared to have been forced up vertically from a larger mass below. The enclosing rocks of the lode are syenite and slate on the west, and granite on the east; its trend is north and south.

About 300 yards east occurs an immense quartzite, with a northeasterly trend, in the center of which occasionally occur pockets of rich antimonial sulphuret of silver and black oxide of copper. This great lode, 200 feet wide, has been located as the Stoney Point. A half mile south of the Northumberland, we come to a narrow belt of granite, in Cedar Point Hill. In this belt are located two of the richest lodes in the district—the Cedar Point and Lady Cummings. The latter is eight feet wide and moderately rich throughout. A few tons from this were hauled to Austin in October, which worked \$130 per ton. The Cedar Point is eighteen inches wide, but extremely rich. Three thousand pounds, without the least selecting, worked at the rate of \$195, while the richest streak of three inches works \$550 per ton. These two lodes are about 100 feet apart, and most favorably situated for development by a short tunnel. The small settlement or camp of the district is in the ravine at the foot of this hill. A few rods below, there is an immense bluff of quartzose rock, the eastern face of which fronts the cañon rises perpendicularly seventy or eighty feet. This bluff is superstitiously avoided by the Indians, owing to its tragic history, given by them as follows: Forty years ago, a famous Shoshone Chief, in the chase, followed a mountain sheep to this summit. The animal, being cornered, fought desperately, and in the contest both were thrown over the cliff and instantly killed. The Indians of this vicinity also tell the story of a white man and small child wandering here twenty years ago. Becoming hopelessly lost, they remained with these Indians a long time, till finally both died. Might not this reveal the fate of the only survivors of a fearful massacre, or terminate the hope and watching in some family for lost ones who are never to return?

A half mile west of Cedar Point Hill there is another belt of granite, in which two fine parallel lodes, called the Fowler and Clark, are located. But a small amount of work has been done on them up to January. However, they gave great promise, showing a very high grade of ore throughout the whole width, particularly the westerly one, which occurs at the junction of the primitive limestone, or between it and the granite. The Detroit is located one mile southeast of the latter. Seven tons of ore from this mine was taken to the Keystone mill, at Austin, in September last, and worked \$173 per ton.

Three miles further south, we come to the Central. This is an immense lode, cropping out a long distance, and is second to none in the district in promise, when we consider the character of the ore, which is so evenly distributed through the great width of quartz that no selection can be made, while it gives a uniform assay of \$54 per ton from the croppings; no work of any consequence having been done on it.

The immediate vicinity of the mines here is not very well supplied with wood; but there is a great abundance within a mile and a half on every side, sufficiently near to offer no objection whatever for reduction purposes.

I have been thus explicit in detail in describing Northumberland, because I consider it one of the solid districts of Central Nevada that has not thus far received the attention it really deserves; also given figures of working results, the truth of which I can vouch for. I notice in the Silver Bend Reporter the discovery of a rich lode located in the hills north of the western entrance to Charnock's Pass, which must be in the southwest corner of Northumberland, proving the existence of mines in all parts of the district, which is ten miles square, extending north and south from Steeple Cañon to Charnock's Pass, and east and west from Smoky to Monitor Valley.

[To be Continued.]

**Dog Power.**—One John Smith, owning a ranch near Yuba City, has put up a wheel eighteen feet in diameter, which he works by dog-power to raise water for his stock, etc. Mr. Smith is a sensible man. We say to our swine, "root hog or die;" would that every dog owner in the State was compelled to say to his canines, "work, dog, or die," and make them do it too.



## Mechanical.

## The Bessemer Process in Troy.

The Troy (N. Y.) Bessemer Steel Works were put in operation, for the first time, on the 9th ult. The starting of these works was attended by a large number of distinguished gentlemen and persons more or less intimately connected with iron manufacture throughout the Eastern States. The machinery connected therewith is complete in all its details, is of the most approved character, and designed to economize, to the utmost, the physical labor connected with such an establishment.

The iron, after being weighed, is raised by hydraulic power to the cupola, which is very high, on account of the necessity of a slight descent at every subsequent process. A charge for the furnace is five tons—the loss from the crude pig iron to the finished bar or steel ingot averaging about sixteen per cent. From the cupola the iron flows into a huge ladle, capable of containing the whole five tons, in which it is conveyed to the converter, all by machinery.

Having been there placed, the blowing operation is put in action, and for about fifteen minutes a body of condensed air is forced upward through the molten iron in the converter. At this moment, a small amount of "speiseleisen," which has been melted in a small furnace near by, is introduced into the iron in the converter, and instantaneously the entire process of conversion is completed. This "speiseleisen" is used as a hardening alloy, and is equivalent to the metal manganese, titanium or Frankinite, all of which are used as alloys for hardening and improving iron and steel.

After the conversion is completed, the converter, which is hung upon pivots, is readily turned, so as to pour its contents into a second ladle, which is so arranged as to move readily along in front of a range of ingot molds, each of which are filled in rapid succession, with very little use of muscular power. Within thirty minutes from the time the iron is tapped from the cupola the entire mass of five tons, less the waste, is deposited in the ingots.

The ingots, while yet hot, are placed for a short time in a furnace, to equalize the heat, which has fallen somewhat on the surface, and then immediately passed through the rollers, to be shaped into any desired form for manufacturer's use. From four to six operations from the cupola to the rolled iron and steel can be effected in a day of ten hours. The economizing of fuel and labor seems to have been carried to its utmost limit.

The use of Bessemer iron is fast becoming universal. As now manufactured, it possesses a homogeneity, purity, toughness, strength and malleability which will admit of its use, with slight variations in its manufacture, for almost every one of the thousand purposes to which in any of its various forms is applied. It is said that 200,000 tons of this metal was produced in Europe last year, and the consumption is constantly increasing. Twenty works of this character are now in operation in England alone, eight in France and Belgium, seven in Prussia, ten or twelve in Austria, and about the same number in Sweden. In this country, the Pennsylvania Steel Co., at Harrisburg, the works of E. B. Wood, Esq., at Wyandotte, N. Y., and the works above mentioned, belonging to Winslow & Griswold, of Troy, N. Y., are the only ones working under the Bessemer patent.

THE ST. LOUIS BRIDGE across the Mississippi, will be 2,700 feet long and fifty feet above high water mark. It will be necessary to bridge the length of two blocks before coming to the city grade. There will be two spans over the main steamboat channel of 350 feet each. It will be built of iron, and cost about \$5,000,000. There will be upon it two double-track carriage ways and one railway track.

## Aluminum Bronze.

Aluminum promises to become quite valuable as an alloy for copper. It is found to add greatly to the tensile and resisting strength of copper and bronze. These metals are also thereby rendered more malleable, and much improved in foundry qualities.

Experiments at the Woolwich (England) Arsenal have proven that aluminum bronze possesses a tensile strength of 73,000 lbs. per square inch, against only 35,000 for gun metal! It works under the hammer almost up to the melting point, and can be drawn out as fine as a needle. It is three times more rigid than gun metal, and forty-four times more rigid than brass! It is less expansible by change of temperature than either. It does not clog a file or lathe in working it, while it can be worked with less difficulty than steel. It is excellent for screws, and notwithstanding its excess of cost in the rough, it is thought to be cheaper in the end. It tarnishes less readily than any other metal used for mathematical, philosophical or astronomical instruments, for which it is said to be also otherwise superior to any other metal which can be used. It is remarkably well suited to receive graduation, as it takes a very fine division, admitting of clear and distinct marking. It can be soldered with either brass or silver solder. It admits of being rolled, which gun metal does not. It must eventually come into very general use for philosophical instruments. Each successive melting, up to a certain point, improves its tenacity and strength.

The best alloy for strength, as for gun metal, is ten per cent. of aluminum added to the bronze or copper. Its cost, at that percentage in England, is about \$1.20 per pound, which is almost four times that of gun metal; yet, in strength, one-half of the former is stronger than the usual weight of the latter. For a great variety of purposes, the difference in the cost of the material is no object in comparison to its superior advantages. Even one part, only, of aluminum to ninety-six of copper and four of tin gives a perfectly homogeneous alloy, of fine color and great hardness and malleability. This alloy does not oxidize in casting; hence there is no loss from the amount first added, no matter how often it is melted. The improvements and increased facilities for the production of this metal must soon render it so cheap that its great advantages as an alloy cannot fail to secure for it a very extensive introduction into the arts in all the specialties named.

**MACHINE DRILLING.**—A rock-drilling machine was recently taken up to the summit tunnel on the Central Pacific Railroad, and set to work. After a thorough trial, it has been condemned and set aside by Mr. Stanton, the Superintendent, who says that in hard rock no machine appears to him to be practicable which does not strike its blow with a hammer. The blow is given to the drill in this machine by means of a spring.

**MODIFICATION OF WOOD BEARINGS.**—The bearing for shafts for screw propellers adopted by many engineers, is to surround the shafts with casings of brass, the inner surface of which are grooved so as to receive fillets of wood. Through the spaces formed between the fillets, water is allowed to flow freely between the shaft and the bearing, keeping the whole cool, and acting as a lubricator. Another modification of the invention is to fix the wooden fillets on the shaft, which then rotate with it in the brass bearings.

THE effect of wind, blowing against a square chimney, it is said, is twice as great as when blown against a circular chimney of the same dimensions. The form of the latter diverts the strength of the wind.

A LATE Boston notion is to generate steam with the aid of waste coal dust, very fine, injected by a current of compressed air into the space over the fire, where it is said to burn with an intensely hot flame, greatly increasing the production of steam.

## Scientific Miscellany.

## Water-Spouts---their Phenomena.

The season is approaching when these phenomena are usually of frequent occurrence in the more mountainous districts of this and the neighboring State of Nevada. A greater or less number of these terrible cloud bursts are witnessed every summer and fall, all along the higher slopes of the Sierra Nevada; and were those regions as densely populated as some other portions of the State, a much larger amount of property and many more lives would be annually sacrificed by such agencies than have hitherto been chronicled. The water-marks high up on the rocks of many of the mountain cañons, and the immense boulders of many tons weight, often found at great distances from their outlets, afford abundant evidence of the sudden and irresistible force of these destructive phenomena.

From the frequency of such phenomena in this State, it would appear that the conditions of their occurrence are more than usually favorable on this portion of the Pacific Coast. Water-spouts evidently consist of dense masses of aqueous vapor, often, but far from always, presenting gyratory as well as progressive motion. It is a matter of no little astonishment to many how it is that they are capable of discharging such immense quantities of water as generally attend their occurrence, especially where the circumstances do not allow of the supposition that it may have been collected from ponds or rivers, as is sometimes the case.

The more recently observed phenomena attending water-spouts prove that electricity, rather than a confluence of opposing currents of air, is the chief agency in their production. Sometimes two storm-clouds approach each other from opposite directions, and usually at different altitudes. On arriving at a position directly vertical to each other, their progressive movement generally ceases, especially if they are in the same electrical condition. The meeting of clouds in this manner, always results in a thunderstorm of somewhat more than ordinary violence, and not unfrequently culminates in a tornado or water-spout—one or both. Under the latter conditions the lower cloud, which has probably been throwing off heavy discharges of electricity, will rapidly unite with the one above, and as rapidly send down toward the earth a cone-shaped projection, which soon reaches the ground and establishes between it and the cloud a direct electric communication. The electricity of the cloud will now pass off through this cone, as through a conductor, and the detonating discharges will cease, so far as relates to that cloud and the earth; but in their stead will most likely appear a destructive whirlwind, and if there be sufficient moisture in the air, a water-spout will be the final result.

Whether this sudden condensation of water is due to the extraction of electricity from the atmosphere, or whether the aggregation of water is produced by some other cause, and the liberation of the electricity the consequence of that aggregation, is a point with regard to which the "doctors" are not yet agreed. All, however, are agreed in the fact that electricity is in some way or other the chief agent in converting what would, under ordinary circumstances, be a common rain-cloud, into a tornado or water-spout.

But all such phenomena are not the result of a mere meeting of opposing clouds. It sometimes happens that a small, isolated cloud will suddenly appear in a quiet atmosphere, and rapidly enlarge into huge proportions, while marked activity will be manifested about its outer edge, by a rush of air from every direction toward itself as a center. Such are called electrical clouds, and they are always attended with a greater or less reduction of temperature, thereby causing the invisible moisture of the atmos-

phere to rapidly pass into the form of a dense mass of cloud. The temperature often descends considerably below the freezing point; sometimes merely causing the vapor to crystallize into snow, but usually freezing it, in greater or less quantities, into hail. When the decrease is very great or sudden, hailstones half as large as hen's eggs, or even larger, are formed. Of course the aggregation in such cases takes place very rapidly, sufficiently so as to allow of an increase from the smallest crystal of ice to the largest sized hailstone, during the time occupied in descending from the point of first increase to the spot where it reaches the ground. The largest of these hailstones are no doubt often produced by the striking and freezing together of one or more smaller ones during their descent.

The air rushing inward, as above described, from all directions, is rapidly borne upward by the vortex motion immediately established; while the moisture contained in the huge converging current is so much condensed on its entrance into this cool, electrical cloud stratum as to remain below, while the air itself passes upward and outward, strained, as it were, of the moisture which it may have brought in from the surrounding atmospheric regions. It is thus, no doubt, that the large amount of water due to these phenomena is suddenly gathered up—the atmosphere for miles around is strained of its moisture, which is thus poured into the vortex of the water-spout, where, as soon as the proper electrical connection is made with the earth, it is suddenly poured out in these destructive torrents which sweep on with such devastation to the plains and valleys below. Admitting this theory to be correct, and reflecting upon the large amount of moisture held in suspension in every cubic yard of atmospheric space, where the thermometer marks a high temperature, there need no longer be any special wonder whence these phenomena derive their immense floods of water.\*

The electrical connection spoken of is produced as follows: An electrical cloud is always charged with the positive fluid, while the earth below is negative. An electrical attraction is thus established between the cloud and the earth, and the cloud is brought downward by electrical affinity rather than by the force of gravitation. The quantity and rapidity of such approach, however, depends both upon the energy of the electrical attraction and the specific gravity of the cloud itself.

The action of this electrical attraction is manifested upon the water by the agitation and boiling appearance which that liquid presents, as the cone-like projection of the cloud gradually reaches down to the surface. On land, this action is shown by its effects on such loose and oppositely electrified bodies as it encounters. When it approaches a good conductor, the electricity is conveyed quickly away to the earth with a rapidity due to the capacity of the conductors encountered. Every pointed spire of grass, every tree, every piece of iron having a good ground connection, will act as a conductor; while light bodies, oppositely electrified, will be attracted and often lifted up toward the cloud, independent of the lifting force of the whirlwind, and held in suspension until their negative electricity is neutralized, when they will fall easily back again, perhaps to be again lifted up, and so on.

Heavy thunder, vivid flashes of lightning, and fiery balls and sparks of electricity, often accompany these phenomena, and the smell of sulphur is sometimes apparent (perhaps more often ozone). It is said that the curtains in a room in a house in Chateaufort, France, were once considerably discolored by the action of sulphurous gases so liberated. It is also recorded, on good authority, that during a storm, encountered many years since, by the British ship *Albemarle*, off Cape Cod, a mass of bituminous or jelly-like substance fell into the ship's boat that hung over the stern, diffusing a strong sulphurous odor, and which was consumed where it fell, notwithstanding efforts were to extinguish it by water and to throw it overboard by means of long sticks, as it could not be conveniently reached by any other means.

All the phenomena attending these occurrences are subject to an infinitude of variations, according to the nature of the cloud, the conducting powers of the various bodies involved, and the greater or less insulation of the substances connected therewith.

\*We are not aware that this theory has ever before been put forth to account for the sudden collection of such masses of water as are often poured out from water-spouts. It may be old, or it may be unphilosophical; if the latter, the fallacy may be placed to the charge of the editor of the Press.



## Foundry and Machine Work.

**THE FULTON FOUNDRY—HINCKLEY & Co., PROPRIETORS.**—The lively aspect of things about the foundries at the present time, is a strong indication of the improvement of business all over the State. We looked into the Fulton Foundry a few days since, and found a large amount of work of various kinds in progress there, as well as elsewhere. Everybody was busy, so much so that we were assured the proprietors had been compelled of late to run their works a considerable portion of time both day and night in order to keep up with their engagements. We are pleased to note such indications of prosperity in the foundries and machine shops of this city. We always know when our home mechanics are driven with work, that there is an unusual activity everywhere up and down the coast, and throughout our vast interior. There is never a demand for the implements of labor, except when labor itself is in demand. The industry of a people is the wealth of a nation. Work for all, and good pay for that work, is the foundation of national prosperity, happiness and contentment.

Californians ought to be a happy, a prosperous and a contented people. The soil of their valleys is the richest the world can produce, while their broad acres can almost feed a world. Their mountains, from base to crest, teem with treasures of mineral, in profusion and value nowhere else to be found. Before them is spread out the noblest ocean which the sun shines upon—its shores and islands filled with countless millions of people, just awakening to the realities and benefits of civilization, and who look to the commercial metropolis of our Golden State as the great *entrepot* for their productions, and the source from whence they are to receive the precious metals which they so much covet.

These are just the very conditions which are needed to build up our mechanical interests. While other interests must spread throughout the coast and interior, the peculiar position of San Francisco must make her essentially the machine shop of the Pacific coast. Already our foundrymen, who cover several of the largest blocks in the city, are looking around for less contracted quarters, where they can have room to grow into the magnificent proportions, which the future of our State points out as the inevitable result for all who continue in the business, and grow up with the growth of the city.

But to come back to the present; as we were saying, everybody is busy at the Fulton. Among a large amount of general work we noticed some heavy shafting, etc., intended for a newsawmill, now being erected at Eureka, Humboldt county, by D. R. Jones & Co. This mill will run a circular and a muley saw, a gang and sash saw, all driven by a powerful engine, with an 18-inch cylinder and 48-inch stroke. The well-known Brodie crushers are made at this foundry—the invention of Mr. James Brodie who is now acting as foreman of these works. We noticed one of these crushers nearly completed for a mill near Virginia City. We also noticed a heavy punching machine, ordered for the especial purpose of punching the iron for the pipes now being made for the Spring Valley Water Works. There is to be upwards of twenty miles of this pipe made for that company; and as the labor of punching will be a very heavy job, it has been thought a matter of economy to order the construction of a special machine for that work. This foundry is putting some extensive repairs upon Monumental Fire Engine, No. 6, for the city. They are putting a new style of pump upon the machine, the invention of Mr. Hayes, the Superintending Engineer of the Department.

**A PRACTICAL METALLURGIST.**—A special notice in another column, announces the services of a young man of high attainments, whom we consider capable of making himself exceedingly valuable in the right place.

**AN IMPROVED BALL ALLEY.**—James D. Patrick, of this city, has invented and made application, through this office, for a patent for an improvement in ball alleys, whereby the use of pins, and the necessity for setting them up after being knocked down, is dispensed. The balls are also self-returning. Instead of the pins in ordinary use, targets, presenting different sized faces, are arranged across the end of the alley, at which the balls are driven. These targets are five in number, the center one being very small. When it is struck, a red card or door, placed just above it, swings back out of sight. If it is struck so squarely that the ball comes directly back without rolling off the alley (the alley is slightly inclined for the purpose), it constitutes a "ten-strike;" if the ball leaves the alley, it counts only five. If the ball strikes either of the two outside targets, a white card or door swings back, and the count is less; if it strikes the second target from either right or left, a corresponding count is made. There are other details and matters of skill with regard to the game, which serve to make it both interesting as a game and useful as an exercise. The cards or doors spoken of are replaced in position by merely touching a lever on the right of the bowler, so that there is no necessity for any attendant whatever at the lower part of the alley. Both the alley and the balls are made lighter than is usual in the mode of construction generally adopted. The principal design of the invention is to lighten the cost of attention, reduce the noise in the alley, and make the game a more desirable one for quiet people who dislike undue excitement and noise. The alley is on exhibition at 751 Market street.

**NEW INCORPORATIONS.**—The following companies have filed their certificates of incorporation since our last issue:

**PIONEER TOW LINE,** to purchase and build boats to navigate the Pacific Ocean and waters of California. Capital, \$30,000; 1,500 shares of \$20 each. Trustees: E. Winslow, B. W. Meyer, S. R. Peterson, B. H. Madison, and Louis Fraunge. June 14th.

**SAN PEDRO G. & S. M. Co.,** to mine in Amador County. Capital stock, \$160,000; 1,600 shares, \$100 each. Trustees: P. H. Cramer, O. Dickinson, Jr., C. W. Kellogg, L. A. Sanderson, and J. H. Kinkad. June 20th.

**THE NEWTON MINING COMPANY,** filed in the County Clerk's office a certificate that their office and principal place of business has been changed from the mine, in Amador county, to this city. June 17th.

**FARMERS' AND MECHANICS' BANK OF SAVINGS,** for the accumulation and investment of funds and savings. Capital stock, \$150,000; 1,500 shares of \$100 each. Directors: Henry Dutton, James Laidley, Geo. H. Wheeler, S. L. Palmer, Reuben Morton, B. H. Freeman, Geo. M. Condon, N. C. Fassett and Isaac E. Davis. June 29th.

This institution is gotten up expressly to meet the views of the large industrial classes. Here the mechanic, small dealer or depositor, can deposit his funds—either for a long or short period, as his circumstances and necessities dictate, and loan it for a longer or shorter period as he may desire. Two classes of depositors will be recognized, viz: dividend and commercial depositors. The dividend depositors are mutual recipients of the profits of the institution. The second or Commercial class will receive such interests on their deposits as may be agreed on, and as ordinary bank customers.

**EASTERN ADVERTISING.**—Mr. I. N. Hudson, of the firm of Hudson & McCarty, of this city, recently left for the East, where he will open a branch agency. New York business men have been less sagacious about advertising in California the advantages they furnish their line of purchasers than European houses. More ready communication with the Atlantic States, and the rapid increase of our population and resources, will awaken the desire for a more intimate acquaintance with our population on the part of Eastern tradesmen.

**THE PEAVINE COPPER MINES.**—A copy of Hatch's new map of these mines, just published by Warren Holt, of this city, has been placed upon our table by Mr. E. M. Sleator, who is now canvassing the city for subscriptions to the same. The map is well got up, and accompanied by a small pamphlet, giving quite a full description of the mines, the facilities for working them, a historical sketch of their discovery, etc., etc. The close proximity of the Central Pacific Railroad to this locality, must add largely to its value and importance, both as a mineral and agricultural district, and greatly facilitate the development of its resources. A branch road has also been projected to connect it immediately with the C. P. R. R. The map is well got up, and fully endorsed by the public surveyors of that district, and several persons high in official position in the State of Nevada. We would suggest to all interested in that portion of our common territory, to purchase the map and examine it for themselves. It can be obtained in pocket form or mounted for a wall map.

**COPPER SMELTING FAILURE.**—According to the *Colusa Sun*, the Lyon Copper Smelting Company have made a failure in their works—their furnace "would smelt the copper, but they could not succeed in running it out." Failures from the cost of producing the metal being in excess of its value, might sometimes be allowable, especially in a fluctuating market; but a failure from the cause above hinted at ought not to be incurred. The ore is said to be rich enough to pay, and in sufficient quantity. If such is the case, the skill to obtain the metal or matte is within the reach of every company, and where judgment is used in securing it, no mere mechanical failure ought to occur.

Since writing the above, we learn the company are going ahead, and are engaged in starting a new furnace, after investigating matters thoroughly. The energy displayed by their agent, Mr. J. Weyand, does not indicate "failure."

**MINING IN IDAHO.**—Our friend, John Hemsley, writes us from Placerville, Idaho Territory, that the "False Bed-rock Diggings," in that vicinity, are doing well. Hathaway & Martin are making \$100 per day each, clear of expenses. Some companies are working over tailings, and doing well at it. Mr. H. thinks that if Dunning's under-current sluice was in use there the tailings would not pay so well. The miners on Graute creek are doing well. The Pioneer G. & S. M. Co., on that creek, are putting up a 10-stamp mill. Hon. George Hearst, of this city, is interested in that mine. The Pioneer, Centerville and Idaho are all at work, some of them doing well, with the reduction of water to forty cents for twenty-four hours and Chinese labor.

Our correspondent sends us \$35, in payment for several new subscribers, whose names he forwards, declining to deduct the usual commissions allowed in such cases, for which he has our warmest thanks.

**ORE BUYING IN CORNWALL.**—The principal portion of the best copper ores purchased by the Cornish copper smelters are received from Chili. Argentiferous ores of as low a grade as twenty-seven ounces of silver to the ton are considered valuable for their silver. The average yield of the selected argentiferous ores, as worked there, is about 270 ounces of silver—less than one per cent. of the ore. The average of the auriferous pyrites is about sixteen ounces of gold to the ton. In buying ores by the cargo, or any large quantity, six different assays are made, from various parts of the lot, which, if varying but slightly, are averaged, and the purchase made. Any assay largely in excess of the general average is thrown out as accidental, and does not come in to swell the average. For silver ores yielding 270 ounces to the ton, \$1.20 (gold value) is paid for every ounce of assay. For gold ores, about \$18 is paid per ounce of assay, *fre.*

## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## RECENT INVENTIONS.

**AN IMPROVED CAR AXLE.**—The Sacramento Union says that experiments recently tried with an improved car axle invented by Mr. J. Graves, foreman of the Pacific Railroad machine shop, shows that in turning the curve on the track at Front and I streets about twenty-five per cent. of power is saved by the invention.

**A CAR BRAKE** for the entire train, and one which will be under the full control of the engineer, is among the late inventions at the East. It was made by Mr. S. McCambridge, and described in the *Journal of the Franklin Institute* for May. In this arrangement a barrel is, by the action of a lever, thrown into gear with the driving axle of the locomotive, so as to wind up a chain which is continuous through the entire length of the train. By this means a given strain brought upon the chain repeats itself equally in each car, thus giving an immense aggregate effect, all within the instantaneous control of the engineer. One great advantage of such a power within the reach of the engineer is to induce him to often use it as a precautionary measure in case of threatened danger, when he might otherwise run a great risk, rather than whistle the brakes down to bring the train to an entire stoppage. The advantage of such an invention, if perfectly practicable, will be readily perceived by all railroad men.

**MULTIPLYING REFLECTOR** is the name of a very ingenious attachment to the ordinary camera used in making photographs, recently invented by Mr. Rawson, of Peru, Illinois. It is so simple one is surprised that it has not been thought of before. On the same support with the camera is placed a box containing fourteen adjustable mirrors, that being the number of pictures usually made of one person. The sitter, instead of being in front of the camera, is so placed that the light from his figure will be reflected by the mirrors and sent through the lens, thus making fourteen distinct pictures. The advantages claimed over any multiplying camera are the superiority and rapidity of the work and the simplicity of the apparatus.

**A NEW MARINE TELEGRAPH.**—The *Courier des Etats Unis* says that Dr. Foucart, the surgeon of the steamer Ville de Paris, has invented a marine telegraph, which, it thinks, will come into universal use. All the disadvantages of the telegraphs now in use on shipboard are obviated. The mechanism is extremely simple and ingenious, and the principle employed has been favorably known in France for some time. The *Courier* thinks that the new invention will be especially useful on armored war vessels.

**CIGARETTES BY MACHINERY.**—A new machine for making paper cigarettes for the "Honradez" manufactory, will be exhibited at the Paris Fair, which produces three hundred cigarettes per minute, or eighteen thousand per hour.

**IMPROVEMENT IN WATCHES.**—An English manufacturer has invented an arrangement of watch movements by which the full-sized balance wheel of the English whole-plate watch is carried in the thin, flat-case, so much preferred for convenience, but hitherto excluding the perfection of structure and durability.

**WATER-PROOF SHIRT FRONT.**—We notice in a Philadelphia paper an advertisement of a "water-proof shirt front," which is described as a snow-white shield, light and pleasant to wear, looks better than linen, never rumples, and when soiled may be wiped off with a wet towel or sponge. One will last for months. This article costs but twenty-five cents, and will be a "fit companion" for the steel collar. We shall have steel shirts, socks and pants soon.

**AN EFFECTIVE FIRE-ARM.**—A new musket, by M. Galaud, a French gunsmith, has been examined by the Academy of Science, which has neither guard nor trigger, no gas escapes and no power is lost. It is very effective, and costs but twenty-five francs.

**ELECTION OF OFFICERS.**—Morning Star G. & S. M. Co., Alpine county. Trustees: F. D. Conro, O. Dickinson, Jr., S. A. Winall, H. W. Shute, M. Scott, P. Meagher, W. H. Culver. President, F. D. Conro; Secretary, C. S. Capp; Treasurer, S. A. Winall; Superintendent, J. C. Ransom. Office, No. 543 Clay street, San Francisco. June 19th.



selves settle the same.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

## CALIFORNIA.

## Alpine County.

*Miner*, June 15th: The assorting floor of the Tarshish is completed, and assorting of the ore is now going on. The ore will be divided into three classes—1st, decomposed ore; 2d, rock containing sufficient gold to justify manipulation, and 3d, rock which will not pay for roasting—the latter to be worked at some future time.

The contractor on the tunnel in the Sam Booth ledge is at work in rock composed of quartz, slate and clay, giving encouragement that a ledge is in the vicinity.

## Calaveras County.

From the *Chronicle*, June 15th: A company of capitalists in Virginia City, Nev., have taken hold of Lamphear & Co's lead, in Spring Gulch, and will prospect it thoroughly. Laborers, under the supervision of an experienced superintendent, have already commenced operations, and work is being vigorously pressed forward. A shaft 50 ft. in depth was sunk on the claim by the former proprietors, and an arastra mill erected. The present owners will sink the shaft 100 ft. further, and should the lead at that depth present as favorable an appearance as it does at present, they will immediately erect the necessary machinery for successfully working it.

Copperopolis *Courier*, June 15th: Poole & Co., of the Salt Spring Valley mines, have completed their arastra, and are working it successfully. Other claims adjoining are being worked with good results.

The Plymouth Rock mine is under the superintendence of Mr. E. N. Robinson, of San Francisco. A 10-stamp mill, supplied with all the latest improvements, will be erected. The rock thus far prospects well. Mr. Robinson also intends to erect a mill and develop the cement claim on the Stanislaus river known as the Frenchman's claim.

The mill and buildings on Quail Hill are nearly completed. Work will be resumed shortly on the Keystone ledge.

San Andreas *Register*, June 15th: Work has been commenced on the Mountain Star lode. An arastra has been erected to work the rock. The company propose to find what they are looking for if it takes all summer. The claim of B. K. Thom & Co. continues to yield bountifully. They are now down 30 ft. in the shaft; \$1,580 had been taken out up to last Saturday, besides having a large quantity of rich pay dirt to sluice out. From one pocket, \$200 was taken out one day lately.

The Carson Hill correspondent of the *Alta* of this city, writing June 17th, says: At Vallecito, a tunnel has been cut a distance of 1,500 ft., at a cost of \$30,000, to give drainage 36 ft. lower than the present outlet. The Union is the only copper mine now taking out ore.

The Morgan mine, which has not been worked for 15 years, on account of litigation, is again yielding profusely. This mine from Feb. 1850, to Dec. 1851, yielded \$2,800,000, which was extracted by arastra, mortar, hand-picking and cold-chisel.

The Mokelumne Hill correspondent of the *Alta*, June 10th, says: A mine and 10-stamp mill belonging to the Mina Rica Co. the Mosquito mine and 15-stamp mill belonging to Cutter & Waters, of San Francisco, and an 8-stamp mill owned by R. H. Vance, are all standing idle at West Point.

At the Woodhouse mill, near West Point, a revolving furnace is soon to be erected, with a capacity to roast 15 tons in 24 hours.

Mr. Bovee, of the Winter mine, has finished a 10-stamp mill. He has sunk down 130 ft., and drifted 350 ft. on the vein, exposing a large body of pay dirt.

## Inyo County.

From the *Enterprise*, June 11th: Mr. Paul has just arrived from Kearsarge; he has been as far down as Walker's Pass, 100 miles below Kearsarge. He brings rich specimens of gold, silver and copper ore. Some specimens from the Silver Sprout, Kearsarge, were full of leaf silver, and are as fine as are to be found in the Comstock. Pieces of the rock which have been subjected to the heat of a blacksmith's forge are literally covered with globules of metallic silver. The mill of the Silver Sprout Co., of 10 stamps, and all needful amalgamating apparatus, will start up in about six weeks. We may then expect to hear of big results. The Kearsarge mill, also having 10 stamps, will go into operation shortly. Large lots of excellent ore are out and in readiness for crushing, at the dumps of both the Kearsarge and Silver Sprout mines.

## Kern County.

Havilah *Courier*, June 8th: Mr. McKead-

ney is building a new quartz mill on the west side of Copperas Branch.

## Mariposa County.

*Mail*, June 15th: Messrs. Coleman & Scanton have been working a quartz mine in Ned's Gulch, a tributary of the Merced river, with good success; they run one arastra with water power. Mr. Scanton has sold his interest to Phil. Dougherty, of Hite's Cove.

A correspondent of the *Alta* of this city, says: In the Princeton mine, there are thousands of tons of \$20 rock in sight. The Pine Tree and Josephine mines are scarcely inferior to the Princeton. These, with the Mariposa mine, are all standing idle. Mr. Brumagim is putting up a Lundgren crusher, and a Ryerson amalgamator in the Bear Valley mill. He expects to have them in operation in a few weeks.

## Nevada County.

*Transcript*, June 14th: About 40 men are now employed on the Jim ledge, and the mill is kept in constant operation. The snow which interfered with its working during the winter, is still some six or seven ft. deep in places.

Young & Black, at Eureka, employ some 30 men. Rock is yielding handsomely.

On the South Fork of the Yuba, some miners have surveyed and laid out a town which they have designated Guntown. Several hundred men are prospecting in the locality, and it is said the ledges look first rate.

Two new mills, one for working quartz, and the other cement, are being erected in the vicinity of Eureka. It is said that a number of Grass Valley and Birchville men have become interested in the development of extensive cement mines in this locality.

The Birchville Co., whose claim is located near Eureka, have been offered \$30,000 for a controlling interest in their mine.

A new town has been located on the Middle Yuba river, seven miles below Moore's Flat, called Yubaville. It is said to have five quartz ledges to build it up, and a large number of confident prospectors.

A cave occurred in the claim of Stidger, Mull & Co., at Buckeye Hill, Bridgeport township, by which Jack Dempson was seriously injured, on Wednesday night last.

June 15th: Ten tons of rock from a ledge owned by Kistle & Co., Myer's Ravine, has been worked at Palmer's mill, and yielded \$25.25 per ton. The ledge is three ft. thick, and has been opened to the depth of 60 ft. below the surface. The test just made proves its value, and a large lot of rock will be taken out for another crushing.

June 16th: The Evans & Stidger claims, at Buckeye Hill, Bridgeport township, made a clean up this week, from which a dividend was declared in the sum of \$10,000.

The Granite Tunnel Co. also made a large clean-up this week of \$8,000 or \$10,000. The exact amount is not yet known.

The Don José Co., at Birchville, recently leased their bedrock to H. Loy & Co., for three years for the sum of \$7,000.

A 5-stamp mill has been erected on the Grizzly ledge. Rock from the lower tunnel paid \$70 per ton. The ledge is wide, and there is every facility for working it to a great depth. The mill is crushing eight tons per day.

A ledge discovered about a year ago by a French company, has been sunk 30 ft. where a 5-ft. ledge of rich quartz was found. The rock is ribboned, and fine gold is thickly distributed throughout. The owners intend to erect an arastra for working the rock.

An old channel of the Yuba has been found at Bald Hill, near Eureka, the bed of which consists of a cement very rich in coarse gold.

*Gazette*, June 13th: The Fidelity ledge, near the Tecumseh mill, is soon to be worked again. A large amount of the rock crushed at the Tecumseh mill with fair returns.

June 14th: In the south drift of the Jim ledge, a four ft. vein has been struck, with richer rock than ever before taken from this mine. A rich chute has been struck in the Birchville tunnel. The rock is spotted and seams with gold. Arrangements have been made for working a hundred or more tons of rock at the Black & Young mill.

June 18th: The Mount Zion Gravel Co., near Snow Point, have recently struck a basin of rich gravel in their tunnel. The Kentucky Co. on the same ridge, have commenced putting up their pumping machinery, and will soon have it running.

*National*, June 12th: The tunnel on the Yellow Jacket ledge is now in several hundred feet. The dirt coming from the tunnel looks well. The Home Ticket ledge is taking out some beautiful specimen, containing free gold and sulphurets in abundance.

EXCELSIOR.—Meadow Lake *Sun*, June 15th: The shaft on the Shooting Star ledge is 40 ft. deep; the ledge is four feet wide.

The company intend to sink 100 ft., and then drift along the ledge.

The Green Emigrant Co. are sending to the surface a large quantity of splendid ore. The Excelsior Co. are remodeling their mill. At a Trustee's meeting of the Kentucky Co., an assessment of \$2 per share was levied. Work will be immediately commenced upon the ledge.

Grass Valley *Union*, June 12th: The owners of the Lightfoot claims, at a late meeting agreed to incorporate, and immediately commenced work on their ledge. The Green Emigrant is yielding \$50 rock. A Mr. Moore is about to put up a concentrator of a new pattern, at the Mohawk mill, which is supposed to be superior to any now in use.

The California Co. are taking some splendid rock from their ledge, much of which shows free gold.

## Placer County.

Dutch Flat *Enquirer*, June 15th: From developments made during the winter, enough has been discovered to warrant the statement that rich gravel deposits exist immediately above the Dutch Flat branch of the Yuba ditch, near Camp No. 2. The gravel, mixed with debris lying on and below the rim, has been washed away, exposing a quartz gravel deposit which prospects well. Into this a tunnel is now being run. The gravel looks well, and appears to be from six to eight ft. deep, in which is superposed a deep stratum of pipe clay, making drift diggings. The washings yielded well. Below the ditch, also, gravel prospects have been found.

June 9th: The first run of the cement mill put up by the King Bros., far exceeded their most sanguine expectations. Less interruption was experienced from the working of the new machinery, and the dirt crushed yielded more than was anticipated.

Sacramento *Union*, June 10th: Coffey, Rison and others, of San Francisco, are about to establish smelting works in Placer county, a few miles from Clipper Gap. Iron ore is said to be abundant in that locality.

## Plumas County.

*National*, June 15th: The new mill of Light & Bro., Genesee Valley, cost \$5,000. At the present rate of working, it will pay for itself in four or five weeks.

Quincy *Union*, June 15th: During the past two weeks, several slugs from 36 down to four ozs., have been found by Bolger & Co. in their claims in French Ravine, near Rich Bar. The Crescent Co., for one week's run, cleaned up on Saturday last \$3,300, and the Whitney mill paid \$2,500 for one week's crushing. The Eagle Co., at Sawpit, cleaned up on the 11th inst., 537 ozs. of gold, for 24 hours' washing of their pay dirt.

## Sacramento County.

Folsom *Telegraph*, June 15th: A chunk of quartz gold, about the size of a man's fist, weighing between four and five ozs., and valued at about \$75, was picked up between Alder Creek and Prairie City last week by Miss Glindkamp.

## Santa Clara County.

The San José *Patriot* says that an exceedingly rich mine of cinnabar has been discovered on the ranch of Chapman, 3½ miles south of San José. There is a solid ledge about 12 ft. wide and eight ft. thick between walls of rock, which grows richer as the excavators descend upon it. They have gone down on the ledge about 150 ft. The ore is being worked at the Guadalupe mine.

## Shasta County.

*Courier*, June 8th: Work will be immediately resumed on the Chicago claim. The last shipment of Chicago rock averaged \$268 per ton. Work on the Red Warrior is progressing finely. The lode is wide, well defined, and prospects rich in gold and silver.

June 15th: Mr. Jones, of San Francisco, an experienced quartz miner, visited the Potosi mine last week, with a view of purchasing the mine, machinery, etc. He expressed himself well satisfied with the mine, and will probably become its owner.

Times are dull at South Fork at present. The great excitement and rush predicted a few months ago, has failed to come off. We regard the mines as good, and think that in time they will yield handsome incomes to their owners.

The work of rebuilding the Mammoth mill, at Quartz Hill, is progressing satisfactorily. It will be in running order about the middle of next month. No more rock can be taken from the shaft until it can be cleared of water by means of a pump propelled by steam power. It is estimated that there is enough paying ore already taken out to pay the expense of removing and putting up the mill.

## Sierra County.

Yreka *Union*, June 15th: The Black Bear ledge is at this time one of the best paying ledges in the State, with every indication that it will continue its present yield an indefinite period. The mill has 12 stamps,

run by water power, and is situated three miles from the ledge. The greatest depth yet reached on the ledge is 300 ft. The ledge varies in thickness from two to 25 ft., and the rock yields from a few dollars per ton to several hundreds of dollars; that worked by the present company has averaged \$18 per ton.

The Union mill is lying idle. The Yellow Jacket, an extension of the Black Bear, is being prospected, with flattering results. The Uncle Sam is also being prospected with good results.

## Sierra County.

Downieville *Advocate*, June 15th: A rich discovery has recently been made near the Sierra Buttes, which far surpasses anything of recent date. The appearance of the rock indicates it to be fabulously rich—free gold being visible in all of it—and specimen pieces containing as much gold as quartz.

Messrs. Green, Martin and others, of San Francisco, have purchased the Blue Tunnel, at Alleghany.

## Yuba County.

Marysville *Appeal*, June 19th: The Donnebroke mill is running on quartz from the Rare Ripe claim; and while they are pumping water from their own claim, receive a supply for their battery from the Rattlesnake company.

## ARIZONA.

San Bernardino *Guardian*, June 15th: Capt. Chapman has completed his equipments for hauling quartz from the Vulture mine to the mill at Wickenburg. Five very heavy wagons have been built. They are of huge proportions, iron being freely used. They were to leave Los Angeles for this place last Wednesday.

## BRITISH COLUMBIA.

From the Cariboo *Sentinel*, May 16th: About 200 Chinamen are engaged in mining on the North Fork of Quesnel.

About 14 men are at work on Cunningham Creek, most of them prospecting.

At a meeting of the directors of the Williams' Creek Bed Rock Flume Co., it was determined to prosecute work without delay. A number of workmen are engaged to clean out the flume, and prepare for the freshet.

May 20th: The Davis Co., Williams' Creek, washed up in one week 300 ozs. Nevada Co. washed up 100 ozs. out of a little dirt taken from the edge of a channel they are trying to bottom. The United Co., Conklin's Gulch, washed up lately 200 ozs.

Discovery Co., Grouse Creek, washed up for three days 100 ozs. The dividends of this company for three months subsequent to 1st Nov., have averaged \$240 to \$500 per share weekly. Black Hawk Co., from two days work, washed up 80 ozs.

At Lowhee Creek, the companies are all at work sinking shafts, and running tunnels.

It is said that 25 cts. to the pan can be got in decomposed rock, taken from the Stewart ledge, Cañon Creek, at a depth of 60 ft.

Black Hawk Co., at Big Bend, took out of one wheelbarrow of dirt, \$100. The Dart & Pond Co. took out of their shaft at a depth of 42 ft., 13 ozs. The Jones Co. worked all winter, and took out \$5 per day to the hand.

## COLORADO.

From the *Times*, May 28th: The following is the result of several workings by the Phelps process:

	Stamp Mill.	Phelps' Process
Adeline ore .....	\$60	\$180 per cord.
200 lbs. Pewabic ore .....	20	3 1/2
400 lbs. Foot & Simmons .....	70	250

The furnace was imperfect in many particulars, yet the ore was put through at the rate of half a ton an hour.

The following are the week's transactions in mining property. S. Harsh et al to Marcus Walker and C. L. Cornish of New York, 800 ft. on the Mountain lode, Illinois Central Dist., and 400 ft. on the Cross lode, for \$85,000; also S. Harsh et al to above named parties, certain claims on the Stabbs and Eckla lodes, Gilpin county, for \$35,000.

Denver *News*, May 29th: Eight lbs. of ore from the Watertown lode, yielded 13½ ozs. of silver, valued at \$17.50 in coin, or over \$4,000 per ton. Several assays by Dr. Johnson, of ore from this lode have averaged \$4,500 per ton. Maj. Anderson intends to begin work on the lode immediately. Messrs. Colb & Fry have bought a quarter interest in Knapp's Gulch claims for \$1,500.

The editor saw a gold bar weighing 6.05 ozs., coin value, \$120.34, the result of 36 hours work of two men in the old Spanish diggings, on the Bayand ranch.

## IDAHO.

From the *World*, June 1st: Mining at Granite Creek is quite lively. Paul, Flynn & Co., after a two week's run, cleaned up 137 lbs. of amalgam, which retorted \$25,552. Maj. Flynn took out a nugget weighing 4½ lbs., worth \$850. The Major thinks he has struck the mother lode of the camp.

At Lemhi, excitements are the order of



the day, yet nothing remarkably rich is reported. A rich quartz camp, silver, is said to have been struck within 40 miles of Lemhi. All business is done on trust—there are hundreds of men at this place hard up for grub.

June 5th: An experienced miner writing from Lemhi to J. W. Woods & Co., Idaho City, says: We have tried the ground pretty fairly, and feel quite discouraged. Some say that there is plenty of \$25 claims here. If there are, it will have to be proved after this. A great many are leaving here. Some of them had claims from which they expected good wages, but they did not pay for working.

A new ledge, two ft. wide, prospecting finely, is said to have been lately discovered on Pine Hill, Rocky Bar Dist.

Owyhee *Adelunche*, June 8th: The Morning Star mill has been at work for three weeks on Oro Fluo ore. The shaft is down 12 ft., and shows ore yellow with gold. Arrangements have been made with the Lincoln mill to crush Woodstock ore.

Blue and Jacob's Gulches are rich in placer gold. Bell & Co's claims have pay dirt from top to bedrock, 10 ft. Specimens of from one to 15 lbs. are picked up in the sluices. Other claims are paying handsomely.

The Webfoot mill is at work on ore from the New York mine.

Plynn, just arrived from Lemhi, says many are leaving who never washed a pan of dirt, nor saw one washed while in the mines, and that all unfavorable reports come from that class.

#### MONTANA.

From the *Post*, June 1st: Hiffner & McCaa, Highland Gulch, are taking out from \$1,000 to \$1,500 per day, to one set of sluices. Green Campbell, on Horse Gulch, with four men, averages \$400 to \$600 per day. Cooley & Co., on Dry Gulch, made a run of \$1,000, with three sets of sluices.

George Caruany on the main Highland Gulch, is taking out from \$100 to \$200 per day. Lewis and Marshall average about the same.

Maj. Packard lately found a nugget weighing \$347. Another found by Green Campbell, weighed \$200, and another found by John Harrington, weighed \$289. Several more weighing from \$50 to \$100 have been found.

The following names and figures indicate the leads, depth of shafts, width of crevice, and yield per ton on the leads crushed by the Alpha mill: Poney, 200 ft., 18 in. crevice, \$85; Galena, 75 ft., 20 in. crevice, \$40; Boaz, 70 ft., 24 in. crevice, \$80; Last Chance, 20 ft., 14 in. crevice, \$40; Blue, 35 ft., 24 in. crevice, \$40; Asop, 75 ft., 20 in. crevice, \$25; Gold Hill, 60 ft., surface rock yielded \$10.

The Casket silver lead near Beavertown, is turning out galena as rich as the Gregory. A rich strike has been made in copper ore at Copper Gulch. Flakes of this copper were panned out in this gulch last summer. Two companies have located, and last Friday one of them, after running in 24 ft., struck into what has proven to be an almost solid lead of copper.

On Cooley's Gulch, from \$500 to \$1,050 for one day's run, is not an unusual yield.

A silver brick is on exhibition in the assay office of Bohm & Molitor, weighing 336 ozs., 18 grs. of the fineness .845, and valued at \$5,697.61. This and a similar bar, are the result of the past two summers work of a ranchman.

#### NEVADA.

##### Black Rock.

From the *Trepass*, June 15th: An invoice of ore from the Black Rock mines, recently worked at the Eagle mill, only paid expenses for crushing, yet the tailings assayed treble the amount obtained from the ore. The ore is intractable, and cannot be worked to advantage by any known process, owing to the presence of lead, antimony, sulphurets, etc., which it contains. Several sacks have been sent to Freiberg for reduction. Meanwhile work has been nearly suspended.

##### Reese River.

From the *Reveille*, June 7th: In the Buckeye ledge, specimens containing the glittering metals are often met with. Large quantities of ore have been mined. Several tons of ore worked at the Austin mills, have produced upwards of \$100 per ton.

Several veins have been found in Summit Cañon, among them the Canada. Several tons of the ore from which have produced near \$1,000 per ton.

Twenty-three tons of ore from the Cortez Dist., now at the Keystone mill, contain considerable quantities of the newly discovered mineral *stefefeldite*. The ore is rich in chloride and black sulphurets, in some pieces the two are combined. The ore should yield \$300 per ton.

The St. Louis claim has been purchased by capitalists who are familiar with its character, and they intend to develop its treasure.

Silver Bend *Reporter*, June 8th: The mill at Hot Creek will be set in motion as soon as brick can be furnished, and furnaces erected for smelting the ore. Work progresses on the Indian Jim ledge, Hot Creek Cañon, and several mines near Rattlesnake Cañon. About 80 tons of ore lies upon the dump of the Gazelle.

An inferior article of coal, supposed to be anthracite, has been discovered near Austin.

Seven thousand ozs. of bullion reduced from ore from the Liberty mine, San Antonio Dist., by the Rigby mill, has been forwarded to Austin. D. S. Child has sold his interest in the Silver Bend Co. on the Transylvania ledge, to W. P. Pritchard and Mr. P. M. Elder—reported consideration \$100,000.

*Trepass*, June 14th: A mill lately erected in Gold Cañon for working corralled sulphurets, has been christened the Pappoose.

June 15th: Some very rich specimens of ore from the Diana claim, is on exhibition at Austin, which is supposed will assay into the thousands.

*Enterprise*, June 11th: Miller and Ripley's fast freight lately arrived in Austin, with \$17,778.81 from the mill of the Manhattan Mining Co.

##### Emerald.

*Enterprise*, June 13th: On the Hamilton claim an incline 50 ft. deep has been sunk where some very fine ore is found. The ledge has been struck 100 ft. below the croppings by a tunnel 60 ft. in length. The rock taken out shows an abundance of free gold.

Some rock from the Imperial mine has been assayed by Weigand of Gold Hill, yielding \$630 per ton, gold and silver.

On the Deposit No. 3, a tunnel has been run in 80 ft. It is expected that the ledge will be struck at a further distance of 20 ft., within a week, about 60 ft. below the surface. Four thousand five hundred lbs. of the croppings, worked in Peurod & Wheeler's arastra, yielded \$75 gold per ton, \$18.60 fine.

A three ft. ledge has been discovered in the U. S. Grant mine, at the back end of a tunnel 40 ft. in length, containing both gold and silver.

The Poorman lead is very rich in coarse gold. The solid quartz from which rare specimens were taken, was found one foot from the surface.

The Black Republican ledge is at least 30 ft. wide. Work is to be immediately commenced on it.

On the 21st of March, Charles Frink sold Wm. Wilson an undivided interest in 175 ft. of four claims near the Wilson ledge, for \$983.

*Union*, June 15th: The long tunnel of the Wilson Co. is in 640 ft.; the short one, 100 ft., with drifts east and west. The Wheeler Co. are running a tunnel, and taking ore out of the shaft. The Hamilton, Forrest, Deposit and Nevada Cos are running tunnels. Morning Star, Rives Nos. 1 and 2, Imperial, Yellow Jacket, Confidence and Empire are sinking shafts or drifting. Several companies are at work on the Vanderbilt ledge.

[In the Stock Circular, in another portion in this paper, will be found late mining news from this district.]

*Enterprise*, June 11th: A body of ore has been cut in the Savage mine, 75 ft. east of any deposit of paying ore yet found. The deposit is situated 200 ft. south of the Gould & Curry, on the 600 ft. level, and is very rich.

June 12th: The machinery for a large mill, weighing over 30 tons, has been bought by a Boston company, and shipped to Newark Dist. The mill will be furnished with the Greeley pans. The bottoms of the settlers are 7½ ft. in diameter; each pan bottom weighs 1,600 lbs. At the Gold Hill Foundry, a battery is being constructed for the Petaluma mill, of which each mortar will weigh 4,000 lbs. For the same mill they are also making a fire front that will weigh 4,000 lbs.

The Overman mine is turning out some fine black sulphurets, specimens of which are on exhibition at Rubling & Co's assay office.

June 13th: The Gold Hill Q. M. & M. Co., have declared a dividend of \$375 per ft.

June 15th: Mr. Haskell intends erecting one of his furnaces in Galena, near Spring Valley, Washoe county. The ores to be worked will be taken from the Alford and Orizaba mines.

Wells, Fargo & Co. shipped during the last week, 11,009 lbs. of bullion, valued at \$117,270.87.

#### OREGON.

From the Jacksonville *Press*, June 8th: The news from Wine's camp, on Jump-off Jo, is in every respect gratifying. Mr.

Wines and partner, after a run of a day and a half, cleaned up \$80. Their claim averages \$12 per day to the hand.

*Sentinel*, June 8th: Rich diggings have been struck on the left hand fork of Jackass creek, some distance higher up than heretofore. About 20 claims have been staked off. The yield is large and for the most part coarse gold. New diggings are being struck almost every week.

#### UTAH.

*Edette*, June 8th: At the store of Beaman & Co. there is a large number of specimens of gold, silver and copper quartz, from Bingham Cañon. Native silver and copper were visible to the naked eye. A. D. Heaton, a gentleman residing at the cañon, has some specimens of copper yielding 95 per cent. of metal. He has also a pennyweight of coarse gold, the result of one pan of dirt. Mr. Molitor, of the firm of Bolme & Molitor, assayers, proposes to visit this camp.

We know that minerals abound here as well as all around us. Coal, iron, lead and copper abound. These are recognized by the Mormons, even. Petroleum springs are known to exist, and there is salt enough here to season the world. Gold and silver are known to exist in different parts of the Territory, in quantities sufficiently rich to pay to work those class of mines. But gold and silver mining are greatly discouraged by the leaders of the Mormon Church in Utah.

OCEAN STEAMING.—Long ocean voyages, altogether by steam and without stopping, is a new experiment in commercial enterprise; but the success which has thus far attended them is highly encouraging for the future. The Panama and New Zealand line is a greater undertaking, in length of voyage, than the San Francisco and China and Japan enterprise, although not attended with so much or such a world-wide importance. Those steamers have now made sixteen trips, all within their schedule time, thus fully establishing the practicability of the service. They run 7,750 miles without stopping, against 4,800—the distance from this port to Yokohama, the first stopping place on the China route. The average speed of the New Zealand steamers, in their sixteen trips, is set down at 242 miles per day. The last return trip of the Colorado was made at the average rate of 238 miles per day.

It is but a few years since such voyages as these were pronounced impracticable, and the Pacific Ocean, except for coasting trade, was considered closed against steam traffic. Improvements in the construction of sea-going steamers and in marine engines have already made that prediction a false one, and the future is most promising for still greater improvements in the same direction. A successful solution of the problem of the economical application of petroleum for steam fuel would work a commercial revolution scarcely inferior in its consequences to the original introduction of steam into navigation. The importance of such a result to California will be the stimulus which will put experiment in that direction to the utmost limit of human possibilities.

BOSTON NOTIONS.—The project of uniting Boston with East Boston by a submarine way, like the Thames tunnel, is being seriously talked off. It is proposed to have it wide enough for a railway, carriage way and foot way. Another Boston notion is the union with the city proper of all the suburban towns for tea or twelve miles around the "hub." It has already encircled within its folds the pretty and historic precinct of Charlestown—Bunker Hill and all, and at latest accounts it had pretty much accomplished the same feat for Roxbury. By the accession of the latter place, Boston will add over 30,000 to its population in a single day.

FOREST GROWTH ON THE PRAIRIES.—As an evidence of the capacities of the western prairies to produce timber, it is said that in Cedar county, Iowa, there is a young forest of a thousand pine trees, in clusters and avenues, where, eight years ago, nothing grew but wild prairie grass. A young man there can be rich in twenty years by planting pine trees to cut for saw logs.

#### COAL DISCOVERY NEAR NEW YORK CITY.

An extensive bed of coal, similar to that obtained from Mount Diablo, in this State, has recently been discovered in Middlesex county, N. J., only twenty miles from the city of New York. It is estimated that 4,000 tons of marketable coal can be taken from one acre of land, and delivered in New York at \$3 per ton. Thirty thousand acres have been leased by a single company, which it is thought will yield an aggregate of eight millions of tons. The recent coal developments in this State render it altogether probable that coal of an inferior though passable quality, will yet be found in large quantities, where its existence has heretofore been considered impossible, according to the past theories of science.

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## San Francisco:

Saturday Morning, June 22, 1867.

## Notices to Correspondents.

ONE INTERESTED draws attention to the following "astounding statistics." The Hale & Norcross Company have for nearly twelve months been carefully making assays of the ores sent to the various mills, and have discovered that, on the average, only 65 per cent. of the actual assay is returned to the company in the form of bullion. This, our correspondent contends, would, on an annual return of bullion to the extent of \$15,000,000, prove that a waste is incurred equal to \$8,076,923 per annum, or at the rate of 35 per cent. on the actual bullion mined, or 53½ per cent. on the bullion saved, which, as this calculation is based on the returns of a company who appear to have a tolerably sharp eye on their interests, would probably be increased if returns from all the mines of Nevada were aggregated to not less than 60 per cent. on the amount of bullion annually beneficiated, or a total annual loss to the Nevada mining stockholders alone amounting to not less than nine million dollars per annum. The preceding supposition is corroborated by the accounts published by the Hale & Norcross Company, by which it is shown that out of ores assaying \$1,288,132, only \$810,977 of bullion was returned, thus losing \$471,155, or sufficient, if the whole had been realized; to have furnished to the stockholders a bonus, at the end of six months, of \$1,178 per foot on 400 feet, or nearly equal to \$200 per foot per month, in addition to the dividends paid to the stockholders. Our correspondent concludes by asking when will such a disgraceful statement of wastefulness be tamely submitted to by stockholders without any practical attempt being made to remedy the evil by superior management.

ALLEMAGNE.—Gunpowder has erroneously been assigned as the invention of Bartholomew Schwartz, a German monk, about the year 1320. Royer, or Friar Bacon as he is more commonly called, in consequence of his being a San Franciscan monk, is undoubtedly the earliest authentic writer on the properties of gunpowder. Somewhere between the years 1240 and 1250, he wrote a treatise on the subject containing the following passages: "From saltpetre and other ingredients we are able to form a fire which will burn to any distance." "A small portion of matter, about the size of the thumb, properly disposed, will make a tremendous sound and commuscation, by which cities and armies may be destroyed." An enigmatical passage occurs in the same work, which is generally supposed to describe the mode of preparation: "Sed tamen salis petre, lurn move cap ubre, et sulphuris, et sic facies, toutitrum si scias artificium." The words in italics are supposed to form the anagram *carbonum pulvere*. The first word, *lurn*, however, is questionable, and may perhaps be a technical abbreviation. Hallam states, on the authority of an Arabic manuscript found in the Escorial, that little room exists for doubt that gunpowder was introduced into Europe by the Saracens about the year 1450, though its use in warfare more resembled fireworks than artillery. Many authorities might be found to show that gunpowder was in comparatively common use early in the fourteenth century. Edward the Third of England employed artillery, with memorable effect, at the battle of Cressy, on the 26th of August, 1346.

## Petroleum as a Steam Generating Fuel.

We have already alluded, at considerable length, to the experiments which have lately been in progress on board the U. S. steamer Palos, for testing the practicability and economy of the substitution of petroleum for coal in generating steam—especially for sea-going steamers. The experiments, which have been for some time in progress, appear, according to telegraphic advices received during the past week, to have exceeded the most sanguine expectations of the engineers who have had them in charge. The speed attained is said to have been much greater than that obtained on the same boat by the use of coal, and at a much less cost. The result was deemed of sufficient importance to be made the subject of telegraph dispatches, both to this coast and to Europe.

In addition to the above facts, we understand that Capt. Eldridge, of the Pacific Mail Steamship Company, is also in receipt of private intelligence from his principals in New York, to the same effect as above. The Captain furthermore expresses his belief in the ultimate success of the enterprise, and gives it as his opinion, that in such an event, every steamer on this coast will be changed from coal to petroleum-burning boats within twelve months thereafter.

This brings us to another important phase in this matter, which is to call the attention of the public to the fact that Mr. J. H. White of this city, has been engaged for nearly three years, in experimenting with the same end in view. Without any knowledge of what was being done in Boston, he has devised an apparatus for hurrying oil, on the same principle as that on which the Eastern experiments appear to be based; but with a somewhat different mode of application. Mr. White has recently submitted his plan to several of our leading engineers and steamboat men, all of whom, we understand, are enthusiastic in their belief with regard to its success, and consider it a decided improvement over that described as employed on board the Palos. Mr. W. has made application for a patent for the same; and the probability is that we shall have the pleasure of witnessing a practical application of the same on board a steamer in this harbor, as soon as the necessary machinery can be got in readiness. The results of this discovery, if the anticipations of practical men are realized, can scarcely be estimated. In addition to the immense advantages which will accrue to ocean steam navigation, they will at once create a fair market for the immense quantity of heavy petroleum oils which are now running to waste from the natural oil springs on this coast, and which, at the present price of coal oil, cannot be successfully utilized.

Mr. W.'s plan contemplates an inexpensive preparation of the crude oils, by which their efficiency, hulk for bulk, will be materially increased; while at the same time, the only difficulty said to be encountered in the Eastern experiments, will be entirely removed—that is, the presence of free carbon, which tends to clog the feeding of the burners.

FOR WHITE RIVER.—Mr. John D. Carter has arrived from the East, and purposes reopening the works and mines of the Philadelphia Mining Company, at White River, Tulare county. Mr. Carter had the superintendence about a year ago, but was obliged to return East on account of sickness. He has great confidence that White River will prove a rich mining district. The new ten-stamp mill is in complete order, and some considerable mixed rock is out ready for crushing. The work will be proceeded with immediately.

MEXICO.—The total value of the real estate of Mexico is put down at \$1,355,000,000.

## "Wirbel-Bewegung?"

Don't be alarmed, dear reader; we have no evil design in placing the above terrible looking word at the head of a leading article. "What is it?" Well, that is just what we are going to explain, and why we have put it there. Wirbel-bewegung is— is smoke: it is air, water, wood, stone, iron, flesh and blood—everything, in short, is *wirbel-bewegung*! Professor Sir William Thompson, of Glasgow, has just found out this astounding fact, and announced it to the world through the Royal Society of Scotland! Wirbel-bewegung is, primarily, *motion* (of a peculiar kind); and smoke, air, water, wood, etc., is nothing but motion? Sir William Thompson says so.

Did the reader ever see a smoke ring thrown out from the mouth of a cannon and go off into the air, writhing and twisting until lost to view or dissipated by the breeze? Well, that is *wirbel-bewegung* made ocular to the weakest vision.

It has heretofore been supposed that what we call solid matter was ponderable and divisible, and that it was impossible to imagine a solid atom so small that it could not be cut in two; it might be dissipated into gases, but it would still have weight, form and divisibility. The least discoverable portion of matter has been termed a *molecule*; and a molecule has been supposed to be made up of numerous atoms, so small that a large number of them must be aggregated before they can be made visible by even the most powerful microscope. But a new theory has latterly obtained that solid matter is nothing more nor less than immaterial, imponderable force, or motion, *hammered* together, as it were, into solid masses! These immaterial "atoms," if we may be allowed the expression, are what Professor Thompson calls *wirbel-bewegung*. The term, *wirbel-bewegung*, however, did not originate with him; but, as its etymology would seem to indicate, it has a Teutonic origin. It has been applied by Helmholtz to a peculiar movement involved in his law of "vortex motion" in a perfectly elastic fluid. The term, as originally used, means whirl-motion. Prof. Thompson takes the matter up where his predecessor left it, and boldly asserts that Helmholtz' rings or modes of motion constitute the ultimates, or rather the beginnings, of matter—that they are the only true atoms.

If we heat a rod of iron red hot, it increases in length; hence its component atoms have the power of motion. By the new doctrine of "Heat a Mode of Motion," it can be proven that heat, in a solid body, is nothing but motion; and as heat and cold are merely relative conditions, the atoms of all bodies must be constantly in a state of motion. What that motion is, or what those atoms are, is, as yet, a mere matter of assumption. Prof. Thompson holds, as above, that the atoms of matter are merely the development of a series of forces, similar to the *wirbel-bewegung*, or whirl-motion, and that the universe is thus built up of laws, rather than material substance.

The Professor illustrated his idea in the following novel manner: "He first set before the audience a long box filled with smoke, with a very small round hole in one end and a larger one in the other end. He then took a piece of thin board and slapped it against the larger opening, when a puff of smoke, in the form of a "smoke ring," shot through the opposite hole, and moved upwards in the room. A large number of these rings were rapidly thrown off, and as they floated about the room, were frequently seen to strike against one another and bound off, with a trembling action. Had these rings been formed of a perfect fluid, and had they moved in another perfect fluid, absolutely free of viscosity, according to the Professor's ideas, and according to all true philosophy, they would have kept up their *wirbel-bewegung* motion to all eter-

nity, for there would have been no friction to retard the same."

The Professor held that if two such vortex atoms should become interlinked, nothing could ever separate them; for one line of vortex motion could never pass through another line. Thus such a double molecule might much vary in shape, yet remain essentially the same. Here, then, claimed the Professor, is a new basis for all physical science!

That there is a perfect fluid, in which bodies move as in a vacuum, is sufficiently proven in the phenomena of the vibratory motion of light through space. That the matter filling space is a perfect fluid, entirely free from viscosity, is evident from the fact that the world has rolled through it for millions of years without any retardation—at least not a second of time has been lost in 3,000 years, as is proved by mathematical demonstrations.

The grand discovery of the conservation of force seems to have brought mankind into a condition to receive with much favor even such a novel theory as the one here set forth with regard to the etheriality of matter. The idea that the molecules of solid matter are hard atoms, is in a fair way to be expunged from our text books, for the new theory that matter is no matter at all, but merely the result of certain forces, or motions, or *wirbel-bewegungen*, emanating from points; and that the universe is built up out of these airy nothings, something as the solid ice is produced from the invisible steam, simply by the extraction of heat.

Did not Sir Isaac Newton have a dim perception of this thing when he said: "Matter is an aggregation of the smallest parts, which are material and extended, and which, by an *unknown power*, are strongly connected with each other." This "unknown power," that great philosopher said: in his treatise on optics, "is the business of experimental philosophy to find out." Sir Isaac, as we now learn, made a mistake in claiming *materiality* for the ultimates, which, of themselves, constitute the "unknown power" which he left for posterity to "find out," and which his countryman has now discovered to be nothing more nor less than the *wirbel-bewegung* of Helmholtz.

Cowper, by this reasoning, also unwittingly uttered a greater truth than he was aware of when he said:

"By ceaseless action [motion] all that is subsists."

A GEOLOGICAL SURVEY OF SOUTHERN NEVADA.—Prof. Gabb, who has recently returned from a geological reconnaissance of Lower California, started on Thursday last, at the head of a party of five or six persons, to make a similar survey of south and southwestern Nevada, including the Pahranaagat district. This portion of the State of Nevada is almost a *terra incognita*, and yet there is very good reason to believe that it contains much mineral wealth. It would be difficult to select a more suitable person to head such a party; and we have the utmost confidence that a large amount of valuable, practical information will be collected by Mr. Gabb and his party. We shall await with much interest any public report which he may make of his researches in that interesting portion of our neighboring State.

SANTA CLARA COLLEGE.—We acknowledge the reception of an invitation to be present at the approaching annual exhibition of the Santa Clara College, Santa Clara, which will take place on the 25th and 26th instants. The exhibitions of this College are always attended with rare interest.

THE MORNING STAR COMPANY, in the Great Mogul District, Alpine County, are now running their north drift, which is in 300 feet from the main tunnel, and are in daily expectation of striking the second chimney—similar to that originally encountered in the tunnel. All appearances are favorable.

CONCENTRATOR DESCRIBED.—To the complete description of Hendy's improved patent concentrator, advertised to-day, we would direct the attention of all parties interested in that class of machinery.



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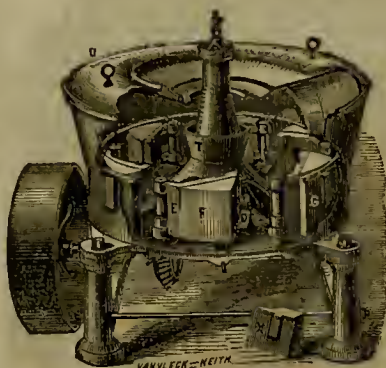
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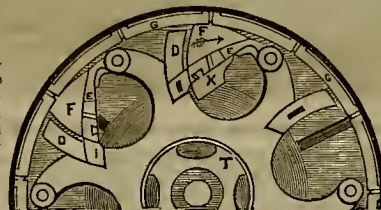
Patent dated April 16th, 1867.



For Grinding and Amalgamating Charges of Ore.

Arranged as shown in the first engraving, the pan is adapted for grinding and amalgamating separate charges of ore of 800 lbs. each, doing its work rapidly, thoroughly and effectually.

This sectional engraving exhibits more clearly the arrangement and shape of the grinding parts of the machine. It, and the other engravings, will be more clearly understood by reference to the accompanying explanation.



Half Section or Top View.

The Centrifugal Ore Grinder.

This new GRINDER and AMALGAMATOR is extremely simple and compact in its construction. The principle involved is entirely novel. The grinding is effected by perpendicular millers, pressed laterally by centrifugal force against perpendicular iron dies, fitted to the inner sides of the pan. It is to be run at a speed of from 60 to 80 revolutions per minute, according to the hardness of the rock to be crushed. The pressure upon every part of the grinding surfaces is direct and uniform, and they wear with straight and true faces from first to last, conforming also to the shape of the sides of the pan, so that the work performed with old millers and plates is as thorough and perfect as with new ones. The pulp enters readily between the millers and side dies, the pressure being light in front and heaviest at the heel of the miller, there is no strain upon any of the parts, and no liability to breakage or disarrangement, and no wear except that which is useful on the grinding surfaces. The work done is performed without jarring, jerking, straining or clogging, with extreme regularity and evenness, the pulp being of great and uniform fineness. It is not liable to be clogged, nor to be obstructed, stopped, impeded or broken, by coarse pieces of rock, pick points or iron, accidentally introduced, with the crushed ore, as these can readily pass each miller separately, without interfering with or affecting the other millers, each of which is independent, or can rest upon the bottom below the millers, without inconvenience, as the arms play freely an inch above the bottom of the pan. It is more readily cleaned up than any other pan, as each miller can be lifted out separately by hand, and there is no necessity for lifting the revolving cone or driver, which is also easily turned, there being no friction when not in use, or rapid revolution. The bulk of the mercury is not ground up with the rock, but lies below the lower ends of the millers in a groove, and in another groove on the cover of the pan, where all the pulp and metal passes continually over it without cutting or carrying it away. The millers and side



For Grinding and Discharging Continuously.

Arranged as shown in the second engraving, all the interior grinding parts being the same as shown in first view, this pan is adapted for receiving and grinding and discharging continuously crushed quartz as fast as supplied by a five-stamp battery, with No. 4 or 5 screens. A "slimmer," or some similar contrivance, to carry off the clay, slime and surplus water, is to be placed between it and the battery.

EXPLANATION.—E, miller-hanger. F, miller plate or shoe. G, side dies. I, supporting lip. D, bearing surface. J, feeder. X, weight to counter-balance wear of miller plates, or shoes. U, cover used in working charges of ore. The dark shade on the bottom of the pan represents one of the grooves for mercury.

dies are easily removed at any time, or when worn out, and an extra set of millers is furnished with each pan sold. It is also adapted for grinding cement, sulphurets, roasted ores, etc.

We claim all these advantages for our Pan, and that it will do more and better work, with less power, and less attention and manual labor, more rapidly and with less expense, than any other pan or miller made for the same purposes, and claimed to be of equal or greater capacity. We will sell them for use on condition that it, when fairly tried they fall to answer these promises, they may be returned.

For full description and illustration, see Mining and Scientific Press, June 15, 1867.

Hinkle & Capp's Centrifugal Ore Grinder and Amalgamator

May be seen in operation, and examined, at the European Metallurgical Works, on Bryant, between Third and Fourth streets, San Francisco, where all interested in mining and milling operations are invited to inspect it. Its weight, as arranged for continuous grinding and discharge, with extra set of six millers, is about 2,700 lbs.; or as arranged for grinding and amalgamating single charges of 800 lbs. of ore, also with extra set of millers, about 5,000 lbs. Price, as above, completely fitted and ready for use, either way, \$500, gold coin.

For further particulars, apply by letter to PHILIP HINKLE and CHARLES S. CAPP, No. 513 Clay street, below Montgomery, San Francisco, Cal. or personally to the above or S. T. KIMBALL, Esq., at the European Metallurgical Works, on Bryant street, between Third and Fourth streets, or at the Miners' Foundry, First street, near Folsom, where they are manufactured.

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It makes hard water as soft as rain water.

For sale at 15¢ per can of five gallons, at the manufactory, 128 Fifth street. Please send your orders, by mail or express, to

LYNN & PARSONS, San Francisco, Cal.

J. H. WHITE. JACOB KRAMER.

Petrolene Oil Works.

J. H. WHITE & CO.,

No. 109 Commercial street, San Francisco,

Are now manufacturing

LUBRICATING OILS & AXLE GREASE,

From Petroleum of California, and ask to be encouraged by the citizens of California. As a home production in all their parts, these Lubricators are equal to any in the market, and surpass all others for cleansing oil from caused by the use of animal oils which contain stearine and margarin, which soon become acid. A fair trial, at the low price asked, is all that we solicit.

H. C. HOWARD,

Member of the San Francisco Stock and Exchange Board,

(Exclusively commission business.)

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ISAAC E. DAVIS. HERAY COWELL.

DAVIS & COWELL,

DEALERS IN

Santa Cruz Lime, Cement,

PLASTER, HAIR, LATH AND LATH NAILS.

Marble Dust, Fire-Bricks, Fire-Clay, Fire Tiles of all sizes. Cor. Front and Washington Streets, San Francisco.

**Balders' Insurance Company—**  
OFFICE IN THE BUILDING OF THE  
CALIFORNIA SAVINGS BANK, California  
street, one door from Sansome street.  
FIRE AND MARINE INSURANCE. 10v14tpr

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEERS, corner of Pine and Kearny streets, makes a specialty of filling the gaps of dead Teeth, and building up broken crowns with **PLATE GOLD**—thus restoring them to their original usefulness and beauty.  
Call and examine the work. Finest quality of artificial work also manufactured. 16v14-tf

BLASTING POWDER.

PRICE, \$3.00 PER KEG.

—ALSO—

SPORTING, CANNON AND MUSKET

POWDER,

Of superior quality.

FUSE AND SHOT,

Always on hand and for sale at the office of the

CALIFORNIA POWDER WORKS,

No. 318 California Street.

JOHN F. LOHSE, Secretary.

25v14qr

LINSEED OIL.

The Pacific Linseed Oil & Lead Works

Are now prepared to furnish dealers and consumers

Pure Linseed Oil,

Raw or Boiled, at the Lowest Market Rates. We call especial attention to the quality of our Oil, believing it to be superior to any imported Oil offered in this market.

Orders from the country will have prompt attention.

Address,  
Pacific Linseed Oil and Lead Works,  
Care of L. B. BENCHLEY & CO.,  
19v14-3m5p San Francisco.

PACIFIC

Rolling Mill and Forge Co.,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of  
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames.

—ALSO—

HAMMERED IRON

Of every description and size.

Orders addressed to PACIFIC ROLLING MILL and FORGE CO., Post Office, San Francisco, Cal., will receive prompt attention.

The highest price paid for Scrap Iron. 19v14-3m5p

A. S. Hallidie & Co.,

MANUFACTURERS OF

FLAT & ROUND WIRE ROPE,

For Mining, Shipping, Ferry,

AND GENERAL PURPOSES.

Office—412 Clay street. Works—North Beach

NOTICE.—THE FIRST COST OF WIRE ROPE IS MUCH less than that of any other kind of Rope of equal strength, and it is four times as durable. Wire Rope does not stretch or shrink by atmospheric changes; it has but one-fifth the bulk of Hempen Rope; is speeded and repaired in the same manner.

The attention of Mining Companies is particularly called to our Flat and Round Hoisting Ropes, which have been in use for a number of years by the leading mines on this Coast, and to any of whom we refer those interested as to the great advantages over any other kind of rope; effecting an immense saving in expenditure for ropes, fuel, wear and tear of machinery, stoppage of works, etc., besides increasing safety of life.

Mining Companies, in erecting Hoisting Works, should be sure and have their drums and pulleys of sufficient size whether for wire or hemp rope.

We manufacture of all sizes, and in any length—

Round Wire Rope—Iron or Steel, for Hoisting.

Flat Wire Rope—

Soft Steel Wire Rope—For Derrick Fall Ropes—

very strong and durable—one third the weight of hemp of equal strength, (savings in freight for remote localities). Suitable sheaves and blocks furnished when required.

Galvanized or Ungalvanized Round Wire

Rope—For Ships' Rigging, Derrick Guys, Ferry Ropes, and all standing purposes.

Steel Ferry Ropes—For wide streams. Ferry Blocks supplied.

Iron and Copper Wire Cord— $\frac{1}{2}$  to  $\frac{1}{4}$  inch diameter, for hanging window shades; Signal Cord; Sash Pulleys on hand.

Comparative Weight, Size and Strength of Iron Wire Ropes, Steel Wire Ropes, Hemp Ropes, and Chains.

Iron Wire Rope.		Steel Wire Rope.		Hemp Rope.		Chains.		Equivalent Strength.	
Cir.	Wt per cunf.	Cir.	Wt per cunf.	Cir.	Wt per cunf.	Size Link.	Wt per 100 ft.	Size Link.	Wt per 100 ft.
2	53	1 1/2	33	5	100	1/2	266	7	2,300
2	83	2	53	6	130	3/4	341	11	3,700
3 1/2	170	2 1/2	91	8	236	1	543	19	6,300

Photographs containing data, with prices annexed, forwarded free, by mail or express, on application to manufacturers. 25v13-6m2p

BOOKS BY THE POUND.—During 1866, Great Britain exported, chiefly to the United States, over 5,000,000 pounds of books, valued at \$8,010,885 in gold, or an average of sixty cents per pound. These figures are taken from the custom house books. Before the war the cost of books, as sold in this country, was from thirty-five to forty cents per pound, and their cost now averages over sixty cents—rare and finely-printed books of course very greatly exceed this average.

JACOB SURW, Pioneer Photographer, 512 Clay street, north side, four doors above Montgomery, (late 315 Montgomery street,) takes all kinds of Photographs in the best style of the Art. He would invite especial attention to the new "Cabinet Photographs," which he is taking to perfection. 10v14tf

NORTH AMERIOA

Life Insurance Company.

Usual Restrictions on Occupation and Travel ABOLISHED!

Policies of this Company are guaranteed by the State of New York, which is true of no other Company on this Coast.

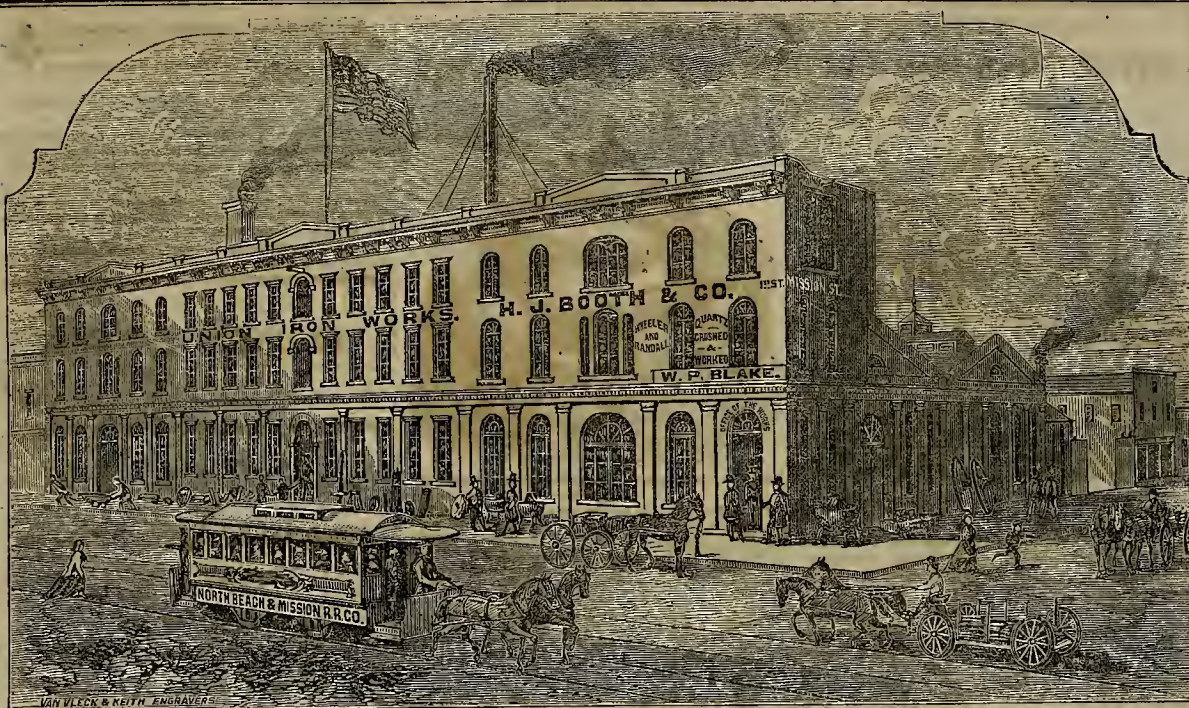
The most Responsible and Liberal Company in the World!

J. A. EATON & CO.,  
Managers Pacific Branch, 302 Montgomery st.  
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NATHANIEL GRAY. H. M. ORAY.  
N. GRAY & CO.,  
UNDERTAKERS,  
641 Sacramento St., cor. Webb, San Francisco.

Sole Agents for Barlow's Metallic Burial Cases and Caskets. 25v14tf





Established in 1849--Corner First and Mission streets, San Francisco.

HAVING INCREASED OUR FACILITIES IN EVERY DEPARTMENT, WE ARE NOW prepared at the shortest notice and at the most reasonable rates, to furnish all kinds and description of Machinery, including Steam Engines, Quartz Mills, Mining Pumps of all kinds, Hoisting Gear, Gas Work, Laundry Machinery, Architectural and Ornamental Castings, Sugar Mills, Saw and Flour Mills, Water Wheels of all kinds, Hydraulic Hay, Rags, screw and Drop Presses, Coining Machinery, Pile Drivers, Bark and Malt Mills, and all kinds of Castings.

**ENGINES.**—Marine Engines, Oscillating and Beam; Stern and Side Wheel Boats, Locomotives, Stationary Engines, Horizontal, Upright, Oscillating and Beam, from six to fifty inches diameter. Also, Scott & Eckart's Adjustable Cut-off Regulator—best in use; W. R. Eckart's Balance Valve for Stationary Engines; Woodward's Patent Steam Pump and Fire Engine.

**BOILERS.**—Locomotive, Flue, Tubular, Upright, Cylinder and Cornish, and every variety of Boiler Work. All sizes of tubes and pipes for pumps.

**PUMPS.**—The Excelsior double-acting Force Pumps are manufactured by us. These very superior Pumps are warranted the best, and are fast replacing all other Force Pumps.

**AMALGAMATING MACHINERY.**—Wheeler & Randall's Improved Tractory Curve Pan, Zenos Wheeler's improved flat bottom pan, Beldin's pan, Veatch's tubs, Prater's concentrators, Waklee's pans, Beers' pan, German Barrels, Arastra Gearing, Chile Mills, Settlers of all descriptions, Retorts of all sizes and shapes, for Silver and Gold, Portable Stamp Mills, Straight Batteries, for Wood or Iron Frames, Dry Crushing Batteries, or machines with the latest improvements, every variety of Stamps, Mortars, Cams, Pans and Tubs. **BLAKE'S PATENT QUARTZ CRUSHERS**, of all sizes.

**OIL BURNING TOOLS AND MACHINERY.**—Of the latest and most approved construction, made from drawings lately made by Prof. Blake at the oil wells in Pennsylvania. We have the facilities for working gold and silver quartz and other ores, to test their value, by the hundred weight or ton.

Russia Iron Screens, of all degrees of fineness and of all qualities of iron. All work done in the best manner at the lowest cash prices.

H. J. BOOTH.

GEO. W. PRESCOTT.

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H. J. BOOTH &amp; CO.

## Machinists and Foundries.

## PALMER, KNOX &amp; CO.,

## Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street, SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

## MACHINERY,

## STEAM ENGINES AND QUARTZ MILLS,

DUNBAR'S IMPROVED

## Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER &amp; RANDALL'S

## NEW GRINDER AND AMALGAMATOR

HEPBURN &amp; PETERSON'S

## AMALGAMATOR AND SEPARATOR,

Tyler's Improved Water Wheel,

Giving the greatest power, at lower cost, than any Wheel in use. There are over 1,500 running, giving universal satisfaction.

## KNOX'S AMALGAMATORS,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either Gold or Silver Ores.

## Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past eight years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver.

## WILLAMETTE IRON WORKS,

PORTLAND, OREGON.

## Steam Engines, Boilers,

## SAW AND CRIST MILLS,

## MINING MACHINERY, WROUGHT IRON SHUTTER WORK, AND BLACKSMITHING IN GENERAL.

Corner North-Front and E streets, 18v13-ly One block north of Couch's Wharf.

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## WILLIAMS, ROOT &amp; NEILSON,

MANUFACTURERS OF

## CROSS' PATENT BOILER FEEDER,

## STEAM ENGINES, BOILERS,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston Packing, for new and old cylinders, manufactured to order.

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## IRON &amp; METAL IMPORTING COMPANY,

Nos. 25 and 27 Fremont street, near Market, SAN FRANCISCO.

Bar and Sheet Iron, Boiler Plates and Tubes; Gas and Water Pipes, Gas Fittings, Anvils, Cast Steel, etc. 18v14-2m

## GEORGE T. PRACY,

## MACHINE WORKS,

Nos 109 and 111 Mission street, between Main and Spear, SAN FRANCISCO.

## STEAM ENGINE, FLOUR AND SAW MILL

And Quartz Machinery, Printing Presses,

—AND—

MACHINERY OF EVERY DESCRIPTION MADE AND REPAIRED.

Special attention paid to Repairing. 24v12

## SAN FRANCISCO

## Foundry and Machine Works,

N. E. Cor. Fremont and Mission streets, Manufacturers of

## Marine and Stationery Engines

Quartz Machinery, Saw, Flour and Sugar Mills, Mining Pumps, Hoisting Gear, Agricultural Implements, etc.

—ALSO—

## Wine, Cider, Cotton and Tobacco Presses

of the latest Improved Patterns.

## STEAM ENGINES AND BOILERS,

Of all sizes, constantly on hand; Quartz Mill Shoes and Dies warranted to be made of the best white iron.

Dunbar's Improved Self-Adjusting Piston Packing, requires no springs or screws; is always steam-tight, without excessive friction, and never gets slack or leaky.

MACHINERY, OF ALL DESCRIPTIONS Bought, sold, or exchanged. Bolt Cutting and Castings at the lowest market rates.

6v11-ly DEVOE, DINSMORE &amp; CO

## GLOBE

## Foundry and Machine Shop,

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## KEEP, BLAKE &amp; CO.,

MANUFACTURERS OF

## Quartz, Saw and Grist Mill Irons, Steam

Engines, Horse Powers,

Mining and Irrigating Pumps, Car Wheels, Derrick Irons, House Fronts, Iron Fencing, Balcony Railings, etc., at San Francisco prices. Orders solicited

13v13-ly and promptly executed.

LEWIS COFFEY. J. S. ANDERSON

## LEWIS COFFEY &amp; RISON,

## Steam Boiler &amp; Sheet Iron Works.

THE only exclusively Boiler Making establishment in the Pacific Coast owned and conducted by Practical Boiler Makers. All orders for New Work and the repairing of Old Work, executed as ordered, and warranted as to quality.

Old Stand, corner of Bush and Market streets, opposite Oriental Hotel, San Francisco.

## CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna, SAN FRANCISCO.

ALL KINDS OF Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Belts and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

PRICES MODERATE.

V. KINGWELL. 19v13-ly J. H. WEED.

## HANSKOM &amp; CO.,

J. O. HANSKOM, H. S. SMITH, T. PENDERGAST, W. W. HANSKOM.

## Etna Iron Works!

Southeast corner Fremont and Tehama streets, SAN FRANCISCO.

## Practical Machinists and Iron Founders,

MANUFACTURE

## STEAM ENGINES,

QUARTZ MILL MACHINERY OF ALL KINDS,

SAW MILLS, FLOUR MILLS,

Dunbar's Improved Self-Adjusting

PISTON PACKING,

Now so extensively used in the East and in this State. Requires no springs or screws; is always steam-tight; without excessive friction, and never gets slack or leaky.

HANSKOM'S CRUSHER,

The best of the kind now in use in this State or anywhere else

Wheeler &amp; Randall's New Grinder and Amalgamator,

Which only needs examination to be appreciated.

Tyler's Improved Water Wheel,

Giving greater power at lower cost, than any wheel in use

Send for one of our circulars, giving full tables

All Wheels warranted to give the owner as set forth, or the money will be refunded.

Sole makers for this coast of the "Pendergast White Iron Stamp Shoes and Dies."

None genuine unless obtained from us. Every one warranted.

Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made to order. The patronage of the public is respectfully solicited.

19v12

## FULTON

## Foundry and Iron Works.

## HINCKLEY &amp; CO.,

MANUFACTURERS OF

## STEAM ENGINES,

Quartz, Flour and Saw Mills,

Moore's Grinder and Amalgamator, Brodie's

Improved Crusher, Mining Pumps,

Amalgamators, and all kinds

of Machinery.

Nos. 45, 47 and 49 First street, between Market and Mission street, San Francisco. 3-qy

## NEPTUNE IRON WORKS,

Corner of Mission and Fremont Streets, SAN FRANCISCO.

## MARINE,

## Locomotive,

And all kinds of

## HIGH PRESSURE

## Steam Boilers

MADE.

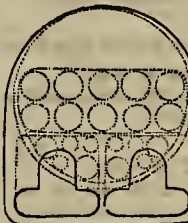
All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc.

Manufactured to Order.

Old Boilers Repaired.

D. CAMERON.



6v12-ly

**GUN COTTON IN THE MINES.**—The Virginia City Tresspass is informed by F. A. Tritle, Superintendent of the Belcher mine, Gold Hill, that he has of late been using gun cotton, for blasting purposes, in the mine. The drift where the cotton is being used is 800 feet from the surface; the air is very hot, and Mr. Tritle assures the Tresspass that he finds gun cotton to be much superior to powder, and for these reasons: it is less dangerous; the smoke caused by the explosion is neither offensive nor dense, and quickly clears from the drift; it does more execution, and it also costs less.

**DECAPITATION.**—The question whether the head retains sensibility after decapitation, has recently been pretty effectually settled in Paris, in the case of the execution of two Arab criminals. Every possible facility was offered for the examinations, which were conducted with all the appliances which science could suggest. Death was pronounced undoubted and instantaneous.

**MINT CHARGES.**—The mint charges, which, in ordinary lots, have heretofore been fourteen cents an ounce, are now reduced to eleven cents. The regular charges are as follows: Bullion under 300 parts gold, three cents per ounce; from 300½ to 600, five cents; from 600½ to 750, seven cents; from 750½ to 949½, eleven cents; and from 950 and above, no charge.

**THE MAHOGANY TREE IN INDIA.**—Dr. T. Anderson has reported to the British Government that great success has attended the introduction of the mahogany tree into the Calcutta Botanical Gardens. Several young trees brought from Jamaica and planted in 1795, were destroyed in the cyclone of 1864, after having attained an average size of twelve feet in girth at four feet from the ground.

A SMALL gold brick, valued at \$500, has been received in New Haven from the new mines near Morgantown, N. C.

## TOWNE &amp; BACON,

## Book and Job Printers,

Have the Largest Office,

Do the most work,

And do it better

Than other offices

In this City,

536 Try them

With a Job,

And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,

Over Pacific Fruit Market.

19v12

## CITY IRON WORKS COMPANY.

P. CLERC, E. KLEINCLAUS, W. DEBRIE.

## CLERC &amp; CO.,

Iron Founders, Steam Engine Builders, and

Makers of all kinds of Machinery.

No. 25 FREMONT STREET, San Francisco. 9v146m

J. NEWSHAM. J. BIGWOOD.

## SOUTH BEACH IRON WORKS,

Near corner of Klag and Third streets, San Francisco.

## MARINE ENGINES,

AND ALL KINDS OF

## MACHINERY FORGING.

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed. 15v14-ly

## JOHN LOCHHEAD'S

## Steam Engine Works,

Beale street, near Mission, San Francisco.

STEAM ENGINES OF EVERY DESCRIPTION BUILT to order—Marine, Stationary, or Locomotive.

## HOISTING AND PUMPING ENGINES,

PORTABLE ENGINES, OF ALL SIZES,

DONKEY PUMPS, Etc., Etc., Etc.

The attention of the parties engaged in shipping or inland navigation is called to the

Superior Workmanship

of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN

STEAM ENGINES

Screw Propellers of all kinds and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**PEPPER.**—Pepper is an almost universal condiment. Black pepper irritates and inflames the coatings of the stomach. Red pepper does not, it excites but does not irritate, consequently it should be used instead of black pepper. It is known to the Romans and has been in use in the East Indies from time immemorial, as it corrects that flatulence which attends the large use of vegetable food. Persons in health do not need any pepper in their food. But to those of weak and languid stomach, it is manifold more healthful to use cayenne pepper at meals than any form of wine, brandy, or beer that can be named, because it stimulates without the reactions of sleepiness or debility.—[*Hall's Journal of Health.*]

**B. F. HOWLAND,**  
**PHOTOGRAPHER,**  
Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Prints, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Charges de Visites only \$25 per dozen; Vignettes at \$1 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14-6m

**JOHN TAYLOR & CO.,**  
**IMPORTERS,**  
AND DEALERS IN  
**ASSAYERS' MATERIALS,**  
Druggists' & Chemists' Glassware,  
Photographic Stock, Etc.  
512 and 514 Washington Street,  
SAN FRANCISCO.

WE are receiving direct from MESSRS. LADD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

**ASSAY AND BULLION BALANCES,**  
And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, NUFFLES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand.  
San Francisco March 6, 1865. 1v10-1f

**PRO BONO PUBLICO.**  
**LACOUR'S**  
**SARSAPARILLERE**  
**BITTERS**  
POSSESS INVALUABLE PROPERTIES.  
They give Health to the Sick,  
Strength to the Weak,  
Joy to the Afflicted,  
Sold by the principal Druggists and Liquor Dealers on the Pacific Coast.  
2v14-1f

**PACIFIC POWDER MILL**  
**COMPANY'S**  
**BLASTING POWDER!**  
MANUFACTURED  
IN MARIN COUNTY,  
CALIFORNIA.  
FOR SALE BY  
**HAYWARD, COLEMAN & CO.,**  
**AGENTS,**  
414 Front Street, San Francisco. 1. 3v14-1m

**Piles! Piles! Piles!**  
NOT PILES OF GOLD, NOR YET OF SILVER, SO much coveted by all men; but the BLEEDING, BLIND or EXTERNAL PILES, can be easily and speedily cured by the use of  
**WOOD'S SUB-POSITORY.**  
It is a preparation totally distinct from anything heretofore offered as a remedy for this painful and often fatal complaint. The SUB-POSITORY is neither a pill, powder, wash or salve, and yet it has proved to be a certain Remedy for the Piles. Do not doubt this assertion, or delay testing the truth of it. If you are troubled with the Piles—you will not be deceived in it.  
Sold wholesale and retail by J. H. REDINGTON & CO., Nos. 416 and 418 Front street; GEO. ORISWOLD, corner of Mission and First streets; OLD FAMILY DRUG STORE, corner Mission and Second streets; UNITED STATES DRUG STORE, Rush street, between Montgomery and Kearny.  
C. WOOD, Proprietor, No. 63 Tehama street, between First and Second. 2v14-3m



**THE PACIFIC IRON WORKS,**  
First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern. Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greeno Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

**GODDARD & COMPANY.**

**CHURCH & CLARK,**  
IMPORTERS AND DEALERS IN  
Mediterranean and California  
**FRUITS, NUTS, CONFECTIONERY, Etc.,**  
AND MANUFACTURERS OF  
**FIRE WORKS**  
Of every description, at No. 407 Front St., San Francisco.  
Printed list of kinds and prices furnished. 1v14-6m12

**NEW YORK PRICES.**  
**C. E. COLLINS,**  
No. 603 Montgomery street, San Francisco,  
**EXCLUSIVE AGENT**  
—FOR THE—  
**AMERICAN**  
**WATCH FACTORY.**  
A large assortment of these  
**Superior Watches,**  
In Gold and Silver Cases,  
Constantly on hand, and sold at Factory prices. Also,  
**ENGLISH AND SWISS WATCHES,**  
Imported directly from the Manufacturers.  
The American Company are now making  
**VERY FINE WATCHES FOR LADIES.**  
A large assortment of Gold Chains and Jewelry  
2v10-6m  
**WATCH REPAIRING AT NEW YORK PRICES.**  
**NEW YORK PRICES.**

**THE WILCOX & GIBBS**  
IMPROVED NOISELESS  
**Family Sewing Machine**  
Challenges the world. It has beaten the Florence badly. Come and see it, or send for Report of the trial.  
**SAMUEL SWIFT, Agent.**  
203 Kearny street, near Sutter.  
13v14-6m

**LUCY & HYMES,**  
MANUFACTURERS OF  
**GENUINE PALE AND CHEMICAL**  
**OLIVE SOAPS.**  
Factory—Beale at., bet Mission & Howard.  
Office, 319 California street, San Francisco.  
1v14-1f

**STOCK CERTIFICATES,**  
**STOCK TRANSFER JOURNALS,**  
**STOCK LEDGERS,**  
**ASSESSMENT RECEIPTS,**  
And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press

**MEUSSDORFFER,**  
Nos. 635 and 637 Commercial Street,  
WILL INTRODUCE  
On Saturday, February 9, 1867,  
An Entirely New Style of  
**Cloth Cashmere Hat**  
"YACHT HENRIETTA,"  
Which are the most dressy Hat ever introduced on the Pacific Coast.  
Call and see them. 8v14

**ITALIAN MANUFACTORY**  
FIRST PREMIUM 1857, 1858, 1864, 1865  
**MACCARONI, VERMICELLI,**  
**PASTE & FARINA.**  
(706 Sansome St. 706)  
SAN FRANCISCO.  
**BRIGNARDELLO, MACCHIAVELLO & CO.**  
12v14-6m

**International Hotel,**  
**JACKSON STREET,**  
BETWEEN MONTGOMERY AND KEARNY STS.,  
**SAN FRANCISCO, CAL.**

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from \$1.50 to \$2.50 per day for Board and Room.  
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

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2v12

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13v14-qr

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**BLASTING AND SPORTING**  
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**Copartnership Notice.**  
THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of Sawing and Planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.  
D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCGILL, HOWARD CHATMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m



Important Notice.

Another New Doctor in the Field!

**DR. H. A. BENTON,**  
Has been performing many wonderful cures in this city the past two years, and, as his practice is fast increasing at the office, he finds it difficult to attend all the outside calls, and has concluded to invite R. H. OLMSTEAD, M.D., to join him. Dr. Olmstead, of Napa City, has been eighteen years successfully treating obstinate cases with water, electricity, and the magnetic forces. Remedies of the Eclectic School, of which he is a graduate, can be resorted to when needed. Being the seventh son of a celebrated physician, and at the same time having a powerful organization, his magnetic bands like magic dispel pain and disease. He is also a natural bone-setter. Dr. Olmstead has this day associated with Dr. H. A. Benton, the Medical Electrician and Homeopathist, at his office, 314 Bush street, San Francisco, who, having all the necessary facilities, such as the patent Electric, Chemical, Sulphur, Vapor, Hot Air and Medicated Baths, which aid in curing all curable diseases, whether acute or chronic, and with the combined skill, together with an excellent lady assistant, gives an assurance of cure to many, benefit to all, and injury to none.  
N. B.—Terms for treatment within reach of all. Office hours: from 9 A. M. to 3 P. M.; Sundays, by appointment.  
Lodging rooms convenient for those who come from the country.  
June 1st, 1887. 22v14-cow4t

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**OFFICE,**  
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**Guardian's Sale of Real Estate.**  
**NOTICE IS HEREBY GIVEN, THAT IN PURSUANCE**  
of the order of the Probate Court of the City and County of San Francisco, in the State of California, made on the 25th day of January, A. D. 1887, in the matter of the guardianship of the person and estate of Bertha Louisa Washburn, a minor, the undersigned, Guardian of the person and estate of said minor, will sell at public auction, to the highest bidder, for cash, in separate parcels and subject to confirmation by said Probate Court, on SATURDAY, the 6th day of July, A. D. 1887, at 12 o'clock M., at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, in said City and County, all the right, title, interest and estate of said minor in and to each of those lots, pieces or parcels of land situate, lying and being in the said city and county, and described as follows, viz:  
Parcel No. 1.—Lot on the west side of Stockton street, commencing 96 3/12 feet north of Jackson street; thence north 20 feet 7 1/2 inches, by a depth of 93 1/2 feet.  
Parcel No. 2.—Lot on the east side of Stockton street, commencing 87 1/2 feet north from N. E. corner of Stockton and Greenwich streets; thence north 60 feet, by a depth of 151 1/2 feet.  
Parcel No. 3.—Lot on S. W. corner of Sacramento and Gustavus streets, 60 feet front on Sacramento street by 77 1/2 feet deep on Gustavus street.  
Terms and conditions of sale—Cash, to be paid on the day of sale.  
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Guardian of the person and estate of said minor.  
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**QUARTZ CRUSHER.**

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The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a reissue of the Patent, bearing date January 9th, 1886.  
**This Patent secures the exclusive right to employ in Stone-Breaking Machines Up-right Convergent Jaws, actuated by a Revolving Shaft.**  
All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials is crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.  
Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.  
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22q

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(Graduate of the Mining Academy, Freiberg, Germany.)  
**Oro, Flint District, Owyhee Co., Idaho.**  
REFERENCES.—George Hearst, John W. Gashwiler, Richn. Hemme & Co., and J. M. McDonald, San Francisco; E. R. Purple, New York; William Bigler, Penn. 14v14-5m

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21v14yr

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**DENTIST,**  
No. 634 Washington Street,  
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The extensive grounds are covered with the rarest trees  
and shrubbery, making it a most desirable spot for small  
parties wishing to enjoy a Pic-Nic.  
To all departments new attractions are being constantly  
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These Gardens are accessible by the Howard, Folsom and  
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19v12-1y

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Ores sent to this establishment—either in large or small  
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15v14-cop3m



## A Word to Readers in the Atlantic States.

Much complaint has reached us, through various sources, at the general lack of knowledge at the East, with regard to mining and other operations on this coast, and the frequent impositions practiced upon the public there, in consequence, by irresponsible persons passing off upon unsuspecting victims worthless mining stock, or persuading them, by false representations, to organize companies and advance money upon worthless ground, or ground which oftentimes has neither value or locality. If our friends at the East, who are still anxious to engage in the laudable venture of mining enterprise, would do so intelligently, let them subscribe for and carefully consult the only journal on the Pacific coast where every mining enterprise that is worth naming is, from time to time, noticed, as its merits may warrant. A mining enterprise on the Pacific coast, which is not referred to in this journal, in some way or other, as often as once in three or four months, is certainly one which people in the Atlantic States should beware of. Our advice to people at the East is never to venture small amounts in mining. If you must start small, let a number of such club together, so as to make the aggregate amount to be invested, such as may be worth your while to inquire into. Jan. 1, 1867.

SEND FOR FREE CIRCULAR AND CONFIDENTIAL ADVICE.

Mining and Scientific Press  
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HONGKONG, 1867.

13v14t

## New Mining Advertisements.

**Chalk Mountain Blue Gravel Company.**—Location of Works: Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eighteenth day of June, 1867, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, No. 641 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner Washington and Sansome streets, San Francisco, California. j22

**Corallera Gold and Silver Mining Company.**

Chihuahua, Mexico Mining District, Mexico.  
Notice.—There is delinquent, upon the following described stock, on account of assessment levied on the twenty-seventh day of April, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Stewart, David.....	123	47	\$47 00
Whitney, J. J.....	247	10	10 00
Hart, C. J.....	76	50	50 00
Hall, G. A.....	251	32	32 00
Barbour, J. H. K.....	10	26	26 00
Roe, A.....	14	52	52 00
Perry, A.....	20	25	25 00
McFarland, W. A.....	15	15	15 00
Trott, D. J.....	61	10	10 00
Knight, J. L.....	75	2	2 00
J. Waich, John.....	13	13	13 00
Andrews, G. B.....	102	6	6 00
Whiting, S. A.....	110	12	12 00
Cooper, W. R.....	253	18	18 00
Dickson, J. B.....	167	16	16 00
Markell, R. C.....	146	5	5 00
Simmons, H.....	149	9	9 00
McLeod, W.....	151	13	13 00
Boque, D. J.....	57	10	10 00
Maue, G.....	60	10	10 00
Cassell, A.....	62	10	10 00
Walch, S. T.....	81	10	10 00
Reed, H. B.....	15	10	10 00
Andrews, G. B.....	144	5	5 00
Whiting, S. A.....	111	10	10 00
Whiting, S. A.....	203	19	19 00
Reed, H. B.....	21	21	21 00
Markell, R. C.....	253	7	7 00
Williams, J. C.....	249	3	3 00
Reynold, D. W.....	189	6	6 00
Riegal, H. D.....	239	6	6 00
Derain, M. S.....	243	3	3 00
Kelly, J. M.....	256	2	2 00
Curtis, A. M.....	54	10	10 00
Beiden, F. C.....	115	10	10 00
Beiden, F. C.....	116	15	15 00
Laster, A. C.....	84, 85, 86, 87	455	455 00
Laster, A. C.....	126 to 131	475	475 00
Williams, J. C.....	159	10	10 00
Reynold, D. W.....	162	6	6 00
Reid, J. M.....	163	6	6 00
Stewart, J. J.....	171	1	1 00
Potter, A. P.....	172	1	1 00
Thomas, E. P.....	173	1	1 00
Witzinger, W. J.....	187	20	20 00
Derwin, M. S.....	183	10	10 00
Kelly, J. M.....	190	3	3 00
McNamara, C.....	196	3	3 00
Bowerman, M.....	202	5	5 00
Small, W. P.....	208	5	5 00
McDonald, T.....	209	5	5 00
Cooper, Emily.....	220	10	10 00
Hart, J. J.....	223	13	13 00
McGivern, P.....	225	6	6 00
Curtis, J. M.....	241	10	10 00
Hall, G. A.....	240	20	20 00
Chapelle, M.....	207	54	54 00
Johnson, J.....	214	5	5 00
Gonzou, A.....	206	4	4 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-seventh day of April, 1867, so many shares of each parcel of said stock as may be necessary will be sold, at public auction, by Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on Monday, the eighth day of July, 1867, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

HENRY R. REED, Secretary.  
Office, 321 Washington street, San Francisco, Cal. j22

**Hanscom Copper Mining Company.**

Location: Low Divide District, Del Norte County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-first day of May, 1867, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. shares.	Amount.
Washington Ayers.....	175	\$ 42
J. D. C. Bech.....	123	3 13
A. H. Cummings.....	124	3 13
Enrah A. Callaghan.....	512	8 33
Eben Dudley.....	2	50
Geo. K. Givens.....	100	25 00
Simon Kuff.....	80	20 00
Lewis Kelley.....	2	50
R. A. Merrill.....	288	7 17
Joe Simpson.....	124	2 43
Emma Simpson.....	93	2 43
I. K. White.....	165	4 17
A. D. Miller.....	25	6 25

And in accordance with law, and an order of the Board of Trustees, made on the twenty-first day of May, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Badger & Chapman, Kearny street, corner of California street, San Francisco, on Monday, the eighth day of July, 1867, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN HANSKOM, Secretary.  
Office, at the Alma Iron Works, Fremont street, between Howard and Folsom, San Francisco. Office hours: from 8 A. M. to 12 M. j22

**I. X. L. Gold and Silver Mining Company.**

Location of Mine: Silver Mountain District, Alpine County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of June, 1867, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, in the store of J. G. Hodges & Co., 418 and 420 Clay street, San Francisco, Cal., or to John G. Hodges, at Silver Mountain.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

FRANK H. HAMILTON, Jr., Secretary.  
Office, 418 and 420 Clay street, San Francisco. j22

**Lady Bell Copper Mining Company.**

Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eighteenth day of June, 1867, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or to J. K. Johnson, at Crescent City.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

B. P. WILKINS, Secretary pro tem.  
Office, 311 Market street, San Francisco, Cal. j22

**Important to Californians.**—Many inventors have lately had their claims for Patents seriously and in some cases fatally delayed by the unqualification of agents who have not complied with the Government license and revenue laws, as well as other new and imperative regulations. These discrepancies, although arising from the inexperience of honest agents, are none the less dangerous to applicants for patents, whose safest course is to trust their business with none but active and experienced solicitors. The Mining and Scientific Press Patent Agency has strictly complied with the regulations of the Department, and properly filed all necessary papers as Claim Agents.

**Naestra Secora de Gandelope Silver Mining**

Company. Location at Works: Tayoltita, San Dimas District, Durango, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twentieth day of May, 1867, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H. Hellermann.....	35	10	\$10 00
H. Hellermann.....	41	20	20 00
Mrs. Elizabeth Nolling.....	181	49	49 00
H. A. Kocler.....	61	5	5 00
J. Kalsch.....	169	10	10 00
John L. Smith.....	184	10	10 00
J. L. Schluter.....	5	11	11 00
L. van Laak.....	30	10	10 00
L. van Laak.....	93	10	10 00

Formerly unassessable stock:  
Edmund Schuler..... 145 5 00  
J. H. Schluter..... 146 5 00

And in accordance with law, and an order of the Board of Trustees, made on the twentieth day of May, 1867, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Badger & Chapman, northwest corner of California and Kearny streets, San Francisco, on Wednesday, the tenth day of July, 1867, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

E. J. PFEIFFER, Secretary.  
Office, No. 210 Post street, San Francisco, Cal. j22

## To Capitalists.

**GOLD QUARTZ MINE, SITUATED IN CALAVERAS** County, with steam mill fitted up with Amalgamating pans, etc. FOR SALE. The mine has three main veins, and more than \$30,000 have been spent in opening them and preparing the mill. Good wagon roads all the way. Apply to BELLOC FRERES, Bankers, 533 Clay street, San Francisco. 23v13-6m

## Mining Notices—Continued.

**Adella Gold Mining Company, Rock Creek,**

Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-ninth day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, No. 429 Pacific street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. C. TAYLOR, Secretary.  
Office, 429 Pacific street, San Francisco, Cal. j21

**Cinco Senos Gold and Silver Mining Company.**

Copala, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1867, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 523 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.  
Office, No. 623 Clay street, San Francisco. j21

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Saturday, the 23rd day of June, 1867, and the sale thereof until Saturday, the 30th day of July, 1867. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.  
j21

**Chilpanaqua Mining Company—District of Urea,**

Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of five dollars (\$5) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, No. 318 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, San Francisco, Cal. j21

**Dardnaelles Copper Mining Company.**

Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of June, 1867, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at Crescent City, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the third day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, at Woodbury & Marhoffer's, Crescent City, California. j21

**Gold Hill Tunneling Gold and Silver Mining**

Company.—Location: Gold Hill Mining District, County of Storey, State of Nevada.

Notice.—The Fourth Annual Meeting of the stockholders of the above named Company, will be held at their office, 415 Montgomery street, San Francisco, Cal., on SATURDAY, the twentieth (20th) day of July, 1867, at 3½ o'clock, P. M., for the purpose of electing Trustees to serve for the ensuing year, and such other business as may properly come before it.

B. WEGENER, Secretary.  
San Francisco, June 15, 1867. j21-5v7

**Hope Gravel Mining Company.**

Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of June, 1867, an assessment (No. 15) of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.  
Office, No. 529 Clay street, San Francisco, Cal. j21

**Lyon Mill and Mining Company, Kelsey Dis-**

trict, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of June, 1867, an assessment of three (\$3) dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.  
Office, No. 5 Government House, corner of Washington and Sansome streets. j21

**Mount Davidson Gold and Silver Mining Com-**

pany, Storey County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 121 Sutter street, San Francisco, Cal. j21

**Oxford Beta Tunnel and Mining Company, Es-**

meralda District and County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of June, 1867, an assessment (No. 22) of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or to the Superintendent at the mine.

Any stock upon which said assessment shall remain unpaid on the tenth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. H. PECK, Secretary.  
Office, 212 Clay street, San Francisco. j21

**Rattle Snake Gold and Silver Mining Company,**

Brown's Valley, Yuba County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-second day of May, 1867, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 318 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-seventh day of June, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.  
Office, 318 California street, up stairs, San Francisco. j21

**Santon Mining Company.—Location of Works:**

Drytown, Amador County, California.

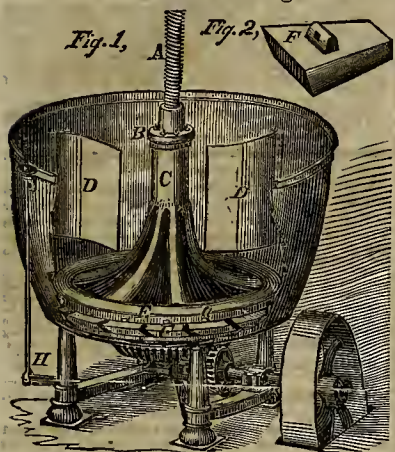
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of May, 1867, an assessment of one hundred dollars per share was levied upon the capital stock of said Company, payable July 6th, 1867, in United States gold coin, to the Secretary, at his office No. 60 Exchange Building, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth day of July, 1867, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-ninth day of July, 1867, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOEL F. LIGHTNER, Secretary.  
Office, No. 60 Exchange Building, San Francisco. j21



## Machinery.

STEWART'S  
CELEBRATED HINGED  
Grinder and Amalgamator.

Is the Cheapest and Quickest Pan Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

VARNEY'S  
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the

PACIFIC FOUNDRY,  
1st St. San Francisco.

## FOR SALE!



PATENT RIGHT OF  
HUNT'S WINDMILL for the  
State of California or the whole  
Pacific coast.

This Mill is superior to any  
other, can be built cheaper, and  
is more durable.  
Full sets of patterns for four  
sizes Self-Regulating Mills, and  
three sizes of Adjustable Mills,  
will be sold with the right.  
This Windmill has been extensively  
advertised all over this coast,  
and is favorably known.  
Apply to

E. O. HUNT,  
28 SECOND STREET,  
11v24 San Francisco.

## To Quartz Miners and Others.

## NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the

## HITCHENS' ORE PULVERIZER,

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphur, tailings, cement, manganese, charcoal, sand, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

11v14-3m JAMES HITCHENS.

## NELSON &amp; DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel, Files,  
Etc., Shear, Spring, German, Plow, Blister and Toe Calk  
Steel manufacturers of

Mill Picks, Sledges, Hammers, Picks,  
Stone Cutters, Blacksmiths' and Horse-Shoers' Tools,  
319 and 321 Pine Street,  
Between Montgomery and Sansone, San Francisco.  
10v14qr

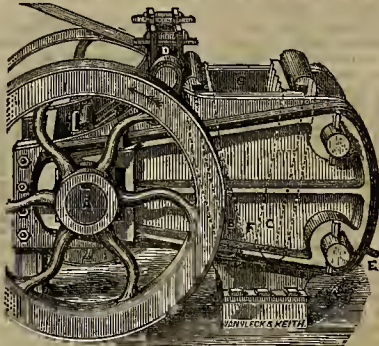
## SAN FRANCISCO BRUSH FACTORY,

No. 211 California st., manufactures to order all kinds of  
BRUSHES.

At lower prices than cost of Eastern importation. Brushes  
for all classes of machinery. A superior Scrubbing Brush  
from Soap Root fiber; also, Sluice Brushes from the same  
material. The Patent Ratum, Street, stable, Plow and  
Plow Brush, for which they have the exclusive right  
for the Pacific Coast.

All orders from the interior promptly executed.  
FELDMAN, SIMPSON & CO.,  
10v14qr. Proprietors.

## Brodie's Patented Improvements

FOR THE TREATMENT OF  
Gold and Silver Ores.

BRODIE'S PATENT IMPROVED QUARTZ CRUSHER. The attention of all interested in Mining is respectfully called to this Improved Machine for breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages, the advertisers are enabled to offer these machines to the public at the following low terms:

No. 1—Or 10-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price, including freight, \$600  
No. 2—Or 15-inch Crusher, capable of similarly putting through five to six tons per hour..... \$850  
No. 3—Or 18-inch Crusher, will in a similar manner crush from seven to eight tons per hour..... 1,200

EXPLANATION OF THE ABOVE ENGRAVING. The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel and allow the crushed quartz to pass off. The dotted lines show the movable and stationary jaws. Letter A represents the eccentric shaft by which the power is applied directly to the movable jaw. B represents the movable jaw, and C the fixed jaw. D represents the link or radius bar. E represents the bolts for regulating the opening, F which can be regulated at pleasure, and to the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Rawhide Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Rawhide Ranch" Mine, in Tuolumne County: JAMES BRODIE, Esq., San Francisco—My Dear Sir: It gives me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Rawhide Ranch Mining Company's Mill, which is entirely met my expectations; and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly, R. P. JOHNSON, Supt. Rawhide Ranch Quartz Mill.

BRODIE'S PATENT IMPROVED OERMAN AMALGAMATING BARREL.—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1884. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above Improved Barrel, are hereby informed that on and after the 1st No. 10, 1886, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A diagram, with explanations of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1886.

BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22d, 1886. BRODIE & RADCLIFF, Express Building, 402 Montgomery street, San Francisco.

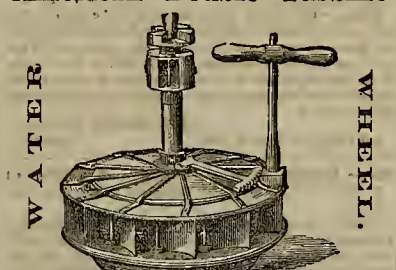
## Hooker's Patent Pump Valve.



A. A. A. are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the India rubber facia, which is secured to the bottom of the Valve by a washered screw, the design of which is seen in the Valve by the advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is increased at small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve are for sale by V. CUSHING, 120 Front street, San Francisco. These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public. See illustration and description of this Pump, published every other week in this paper 14v14qr

These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public. See illustration and description of this Pump, published every other week in this paper 14v14qr

LEFFEL'S  
American Double Turbine

THESE WHEELS, UNEQUALLED AND UNRIVALED in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc. CALIFORNIA REPRESENTATIVES—E. Stetson, E. Simons, Oakland, (Mill at Clear Lake); Morgan Coville, Lexington, Santa Clara County; J. V. McMillan, Lexington, Santa Clara County. AGENTS FOR CRUELER, KNAPP & GRANT, Agents for California, 310 Washington street, San Francisco 25v13-1yq

## Hunt's Globe Pump



Is extensively employed for raising water by hand or wind-mill power, for house or garden uses. Manufacture five sizes, from 3 to 8 inches diameter in the chamber. These Pumps are all fitted for iron or lead pipes. They are very durable and easy to repair.

No. 3—3-inch Chamber, 6-inch Stroke.  
No. 4—4-inch Chamber, 6-inch Stroke.  
No. 5—5-inch Chamber, 6-inch Stroke.  
No. 6—6-inch Chamber, 8-inch Stroke.  
No. 7—8-inch Chamber, 10-inch Stroke.  
Manufactured at No. 28 Second street, and 110 Jessie street, San Francisco, by E. O. HUNT, Windmill Builder. 22v14qr

## Steam Pumps,

FOR DRAINING MINES OR ELEVATING WATER TO ANY HEIGHT.

## PICKERING'S GOVERNORS

For Steam Engines.

## Giffard's Injectors,

For Feeding Boilers.

## STODDART'S IRON WORKS,

Beale Street, San Francisco.

## QUARTZ MINERS, MILLMEN,

And others contemplating the erection of Reduction Works, for either Gold or Silver Ores, your attention is called to a new, superior

## First Class Mill,

In all respects, with Pans and Separators complete. The Mill is adapted for 20 or 40 Stamps.

Full particulars may be had by calling on Messrs. Palmer, Knox & Co., Golden State Foundry, or J. B. HITCHCOCK, Millwright, Russ House.

19v14-3m

## DUDGEON'S

PATENT

## Hydraulic Lifting Jacks

—AND—

## BOILER PUNCHES,

16v14 Eighth street, cor. Minna. qr

## BLAKE'S QUARTZ BREAKER!

## PRICES REDUCED!

MACHINES OF ALL SIZES FOR SALE

—AT—

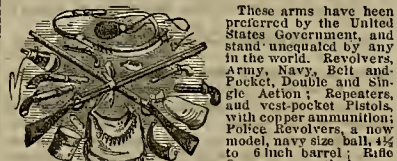
## WM. P. BLAKE,

Corner First and Mission streets, or Box 2,077  
3v13f SAN FRANCISCO.

## REMINGTON'S ARMORY.

Agency, 310 Washington st., San Francisco.

## PRICES REDUCED!



These arms have been preferred by the United States Government, and stand unequalled by any in the world. Revolvers, Army, Navy, Belt and Pocket, Double and Single Action; Repeaters, and vest-pocket Pistols, with copper ammunition; Police Revolvers, a new model, navy size ball, 45 to 6 inch barrel. Fine Canes—an entirely new Arm—having a range and accuracy equal to a rifle, and a most perfect Gauge. All the new models for sale very low. 12v13qr

ALBERT E. CRANE.

## Notice to Miners,

## Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done. M. PRAG, 8v13-1y Stove Store, No. 125 Clay street, below Davis.

## Mechanical Drawings.

Persons wishing Mechanical Drawings can obtain the services of competent draughtsmen, by applying to this office.

NITRO-GLYCERINE IN BLASTING.—A correspondent of the Nevada Gazette, who has recently visited the summit tunnel on the Central Pacific Railroad, writes that the contractor thinks they are going ahead with the tunnel fully twenty-five per cent. faster by the use of nitro-glycerine than they could by using powder. The small holes required for the oil can probably be drilled in less than one-third the time required for the larger ones necessary in using powder. The oil does much more execution than powder, as it always breaks the rock from two to sixteen inches beyond the hole, and also throws out a much larger body. The oil, in hard rock, shows a strength five times greater than powder, pound for pound. It is made upon the spot, and is considered much stronger, as well as safer, than that imported. They have now been using it for several months, and have never yet had a premature explosion, or any other accident, and not a single blast has missed fire since the Chinamen commenced filling the cartridges. The work upon this road seems to have fully set at rest the superiority of nitro-glycerine over powder, both for economy and safety. Of course this applies to the oil made upon the spot, and not to the imported article.

THE BIBLE ON SPIRITUALISM.—The Bible is often appealed to as a supporter of "spiritualism." Let us cite a few texts for the consideration of such as have read their Bibles to so little purpose as to hold to such ideas:

Regard not them that have familiar spirits; neither seek after wizards, to be defiled of them.—Lev., xix: 31.

And the soul that turneth after such as have familiar spirits and after wizards to go astray after them, I will set my face against that soul, and will cut him off from among his people.—Lev., xx: 6.

There shall not be found among you \* \* \* a consultant with familiar spirits, or a wizard, or a necromancer [one who inquireth of the dead]. For all that do these things are an abomination unto the Lord.—Deut., xviii: 10 to 11.

And when they shall say unto you: Seek [look] unto them that have familiar spirits, and unto wizards that peep and that matter; should not a people seek [look] unto their God [when they wish to inquire] for the living to the dead?—Josiah, viii: 19.

From the above, and from similar texts, it is plain not only that "spiritualism," as now popularly understood, is no new thing, under the sun; but that the Bible plainly teaches that "consulting familiar spirits" and "inquiring of the dead," except through God himself, is not only forbidden, but he that practices it, or employs another to practice it, subjects himself to a most terrible retribution.

PRECAUTION AGAINST FIRE.—Mr. James Leland, of the Occidental Hotel, exhibited to us, yesterday, an additional precaution against fire in the Occidental Hotel. It is a pump of four inches diameter and twelve inches stroke, called "Hooker's Excelsior," and will throw a stream from the cellar to the roof of the building. This pump is connected with all the hydrants in the house, and it is difficult to see how a fire could get any start with the hose properly managed. The hose were taken to the roof yesterday, and a half-inch stream was forced twenty feet up into the air. Any part of the building can be commanded by this addition to their preventives.—Daily Alta.

It is to be regretted that all public buildings have not thus been provided with such simple and effective apparatus. Captain Cashing may consider the above test another high compliment for his California "Excelsior" pump. 11v14qr

A STRANGE METAL.—The Idaho World speaks of a "strange metal," which is found in the Pioneer quartz ledge near Placerville, which puzzles the metallurgists of those parts. It is said to be very dense, brittle, and so hard as to readily and deeply scratch glass; it is almost as brilliant as ormol, and yet it is comparatively light in weight. It is said to occur in detached pieces in considerable quantities in the mine mentioned.



**A VALUABLE DISCOVERY.**—An Eastern paper says that the Department of State has received information from the United States Consul at Lambayeque, Peru, that an important discovery has recently been made in Peru of the silk plant. Preparations are being made to cultivate it upon an extensive scale. The shrub is three or four feet in height. The silk is inclosed in a pod, of which each plant gives a great number, and is declared to be superior, in fineness and in quality, to the production of the silkworm. It is a wild perennial, the seed small, and easily separated from the fiber. The stems of the plant produce a long and very brilliant fiber, superior in strength and beauty to the finest linen thread. Small quantities have been woven in the rude manner of the Indians, and the texture and brilliancy is said to be unsurpassed.

**GRAFTING THE ROSE INTO THE LOCUST.** Our attention was called, a few days since, says the *Sonora Herald*, to a very pleasing and novel sight. Into the limbs of one of the locust trees which surrounded the Rifle building, has been grafted seven slips of a rose bush. But one of the grafts took, and this produced curious flowers. The stem is that of a rose bush, of course, and the leaves are shaped like a rose leaf; but in every other particular resembles that of the locust. The flower is a deep red, like a rose, but formed and looks precisely like the locust flower. It is a very pretty combination, and the first one of the kind we ever saw.

MR. PEABODY, it is said, purposes depositing Queen Victoria's portrait, which she presented to him, in the Marshall Institution, near Boston, and has built a new room there to receive it, which has cost him \$40,000.

#### A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the *Mining and Scientific Press*, or address DEWEY & VAUGHN, Mountain Messenger office, Downsville, Sierra County, Cal. 7v14lf

#### HAYWARD, COLEMAN & CO.,

IMPORTERS AND REFINERS

#### Illuminating, Lubricating, AND PAINT OILS!

CONSISTING OF  
KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

#### SPIRITS OF TURPENTINE & ALCOHOL

NOTE.—We would specially call the attention of MILL owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning oil.

A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

#### Lamps and Lamp Stock!

An elegant and complete assortment on hand. 13v13m19 414 Front street, San Francisco.

#### California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE  
" CHRYSOPOPOLIS.....CAPT. A. FOSTER.  
" YOSEMITE.....  
" CORNELIA.....CAPT. W. BROMLEY  
" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

JOHN BENCHLEY, President.

#### EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

#### WOOD AND COAL,

No. 513 Bush street, between Dupont and Stockton 14v14-6m SAN FRANCISCO.

#### ISAAC LOBREE & CO., GOLDEN STATE POTTERY, -ANTIOCH, CAL.

Office in San Francisco, 516 Commercial st. Constantly on hand a large assortment of Earthenware, Fire Bricks, Fire Clay, and Stoneware. Is prepared to fulfill all orders at the shortest notice. 20v14f

#### GOVERNMENT HOUSE,

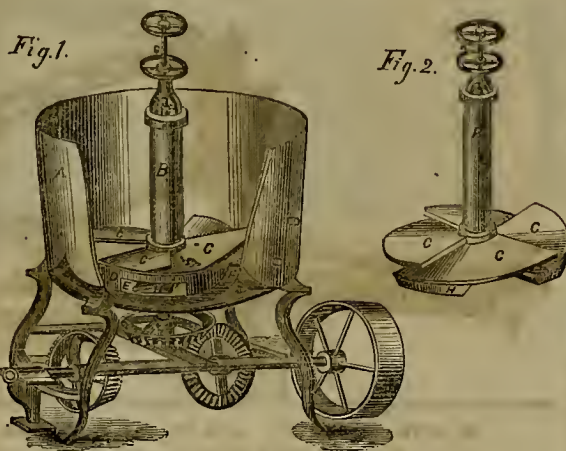
Corner of Sansome and Washington sts. SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE in every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for ladies and families, where persons can board for one-half they are required to pay at hotel. 7v13-6m SANBORN & CO

#### Gaston's Screw Grinder and Amalgamator

The Best Yet Invented.

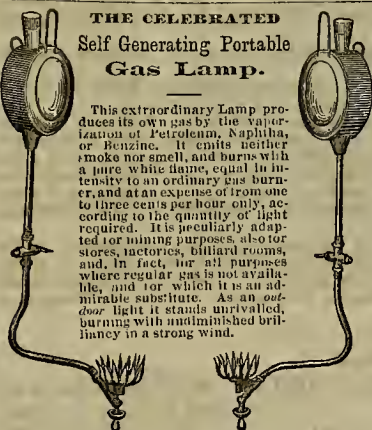
For rapidity and thoroughness of work, the machine above illustrated is unequalled by any. It wastes no appreciable quantity of quicksilver, and is of itself a perfect settler. Fig. 1 represents the pan with part of its side removed, and fig. 2 the screw miller, and its shoes. The letters c show the threads of the screw; H, its shoes, and D a low cylinder within which the screw rotates; E, represents open spaces through the base of the cylinder, and F, inclined partitions filling (at those points) the spaces between the cylinder and the shell of the pan. These inclined partitions are to intercept the current of pulp around the pan, as it issues from under the miller, and turn it toward the center again, over the screw. The dies are not shown in the figure—there are eight. Mercury is not ground, nor floured in this pan. The pulp is ground to a slum, with great rapidity; the miller is raised a little and the quicksilver is poured in *en masse*, forming a layer upon the bottom of the pan. The revolution of the screw then forces the pulp down into contact with the quicksilver, into which it is *effectually rubbed* by the shoes, while the screw, being constantly fed by the pulp from above, presses all under the miller outward—still in contact with the quicksilver, through the spaces, E, and thence over toward the center of the pan, when it is again seized by the screw and forced down into the quicksilver, rubbed into and forced off in contact with it, which process is continued as long as desired. The pulp can thus be forced into contact with the mercury at the rate of 1,000 pounds in three minutes, or twenty times per hour, and none can escape contact with the mercury, that contact being under the immense pressure of the perpetual screw, in addition to that of gravity, which (gravity) is the only available force in the other pans for bringing the pulp into contact with the quicksilver. "A word to the wise is sufficient." The Screw Amalgamator is the cheapest and most efficient pan manufactured. Millmen! call and see one running at the Pacific Foundry. For particulars, address the inventor, H. A. GASTON, at Cosmopolitan Hotel, San Francisco; or R. L. THOMAS, Esq., Virginia City, Nevada. 1v14qr



Stair Work of all kinds,  
MADE TO ORDER  
And Shipped to all parts of the Coast.



Newel Posts and Balusters,  
CONSTANTLY  
On Hand and for Sale.



#### THE CELEBRATED Self Generating Portable Gas Lamp.

This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, factories, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light, it stands unrivalled, burning with undiminished brilliancy in a strong wind.

#### Directions for Use.

Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to generate the gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.

A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.

When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.

Manufactured solely by JOHN J. HUCKS, original proprietor, Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State. 15v14-3m

#### CUT NAILS.

2,000 KEGS ASSORTED SIZES,

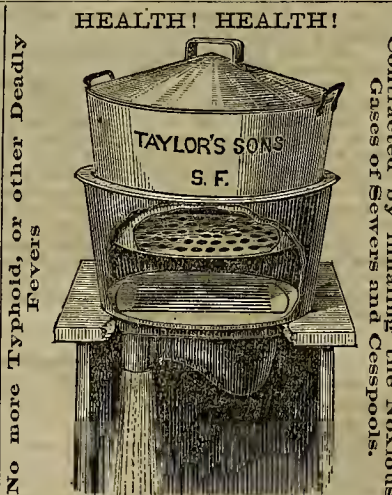
For sale in any quantity, to close invoice, at the very

Lowest Rates, by

#### THOS. H. SELBY & CO.,

110 and 118 California Street,

SAN FRANCISCO. 19v14-3m



#### Taylor's Stench Traps and Garbage Baskets,

To prevent this, purchase one of Taylor's Stench Traps and Garbage Baskets, And promote the health, comfort and cleanliness of your family. For description see Mining and Scientific Press, April 6, 1871. Sold wholesale and retail by TAYLOR & SONS, at No. 420 Pacific street, San Francisco. 15v14f

#### Pratt's Abolition Oil.

FOR ABOLISHING PAIN—THE BEST REMEDY IN existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Cords and Muscles, Cramps, Colic, Diarrhoea, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 534 Sacramento street, opposite What Cheer House, San Francisco. 16v14-ly

#### To the Mining Community.

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS' constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 851 Harrison street, San Francisco. 16v14qr

WILLIAM WILLIAMS, Practical Mining Engineer.

Favorable to Inventors.—Persons holding new inventions of machinery and important improvements, can have the same illustrated and explained in the *MINING AND SCIENTIFIC PRESS*, free of charge, if in our judgment the discovery is one of real merit, and of sufficient interest to our readers to warrant publication.

#### Portable Steam Engines!

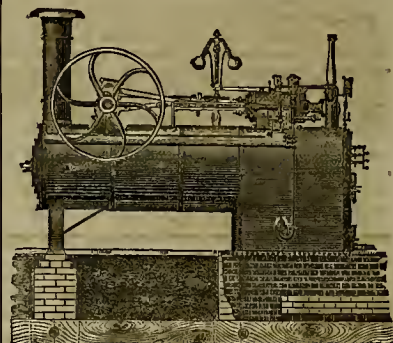
"Hoadley's" and "Hittinger's" Make,



HOADLEY'S.

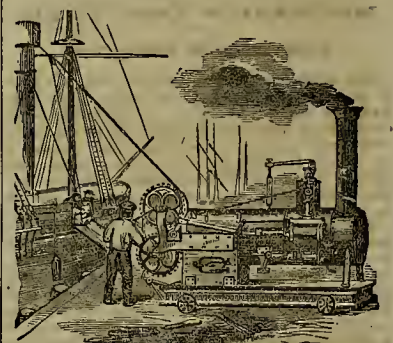
FOUR SIZES,

8, 10, 12, and 15-Horse Power,



HOADLEY'S.

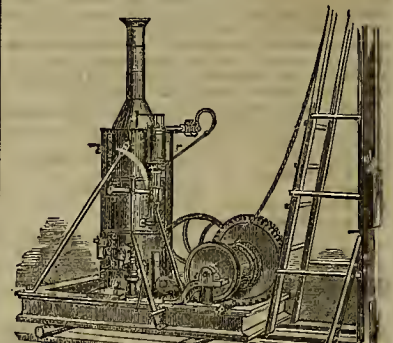
3 to 40-Horse Power.



HITTINGER'S.

THREE SIZES,

5, 7, and 10-Horse Power



HITTINGER'S.

TWO SIZES,

5 and 7-Horse Power,

COMBINING THE MAXIMUM OF EFFICIENCY, DURABILITY, and Economy, with the Minimum of weight and price.

These Engines are favorably known, a large number being in use on this coast for hoisting, pumping, threshing, milling and mining purposes. Steam can be got up on these Engines in fifteen minutes after reaching the place of operation, and the time, expense of setting boilers, machinery and "construction account" saved, (which is often the difference between the successful and unsuccessful prosecution of mining enterprises,) in fact, the portable principle is the pioneer's friend, and enables him to draw engines on their own wheels to his cabin door, and plant on the outermost confines of civilization the saw and grist mill, and it has done, and will do more to help subdue the continent than any other of the modern motors which are crowding society and normalizing the world.

All sizes on hand from 3 to 30 horse power, with and without carriages.

Also, Portable Saw and Grist Mills. For sale by TREADWELL & CO., 9v14-6m15p Corner of Front and Market streets.



"EL PORVENIR."—This journal, published at Rivas, Nicaragua, by Henry Götzel, in both the Spanish and English languages, evinces a commendable enterprise, entitling it to the support of persons interested in the progress of the country in which it is published. Files of our paper can always be found at the office of *El Porvenir*.

THE SMELTING FURNACE, which we described in our issue of the 8th inst., we are informed by Mr. O. W. Easton, is quite similar in design to one originally devised by Mr. J. H. White, of this city; which latter was a modification of the well-known Siemens's furnace.

Persons desirous of obtaining the finest Wood Engravings, can procure them only by having the picture photographed on the block, by

D. H. WOODS,  
No. 28 Third street.

**Gold Bars**, of whatever size, if well cast, assayed for two dollars, at A. P. MOLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint. 15v14-3m

**Brown's Filtering Heater**.—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, on application, in person or by letter, to  
AUSTIN A. WELLS, Agent.  
5v14-1v

**METALLURGIST**.—A PRACTICAL metallurgist, experienced in all branches of his business, and particularly in the manufacture of tough copper, wants employment. His address can be had at the office of the Mining and Scientific Press.  
25v14-4w\*

## CHICKERING & SONS'

**PIANO FORTES**  
Never fail to stand any climate.  
The only Perfect Pianos  
They lead in all valuable improvements—all others follow.  
Agents: KOHLER, CHASE & CO.,  
421 Montgomery street, b. t. California and Sacramento.  
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## MECHANICS' INSTITUTE.

### Resources of California.

THE MECHANICS' INSTITUTE of San Francisco, hereby offer a PREMIUM OF ONE THOUSAND (\$1,000) DOLLARS for the best Essay on the "RESOURCES OF CALIFORNIA, AND BEST METHOD OF DEVELOPING THE SAME," under the following conditions: One-half of the premium in cash on the certified award of the Committee of Judges, and the balance from the first proceeds of sales of the successful work, which is to belong to, and will be published by, the Institute.

The Essays are to be handed in to the Librarian of the Institute on or before the FIRST DAY OF JUNE, 1868, and the award will be made by the Judges at the opening of the Industrial Exhibition, which is to be held in August or September following. The Essay should be divided into three great heads, viz.: Mineral, Agricultural and Industrial Resources, with proper subdivisions of each subject. It should be sufficient in quantity to form a duodecimo (12mo) volume of from 250 to 300 pages long primer type, solid.

Writers will sign their articles in cypher, and send their names and address in sealed envelopes, which will be kept in a secure place by the Institute, and only be opened when the award is made. The manuscripts of unsuccessful writers will be returned to them without publicity.

The Committee of Judges have the right to reject all Essays in case they do not consider them worthy of publication or the premium. No further instructions than are contained in this advertisement will be given to this Committee, nor will they be subjected to any advice from the officers or members of the Institute in regard to their proposed action. All manuscript submitted must be in clear, legible writing, so as to admit of easy reading.

The following named gentlemen, who have been selected for their well known ability, public spirit and integrity of purpose, will compose the Committee of Judges:

Hon. Fred'k F. Low, Maj. Gen. H. W. Halleck, U. S. A.,  
Prof. J. D. Whitney, S. A.,  
James Otis, Prof. W. B. Ewer,  
Wm. Governor Morris, B. N. Bugbey.  
By order of the Board of Directors.

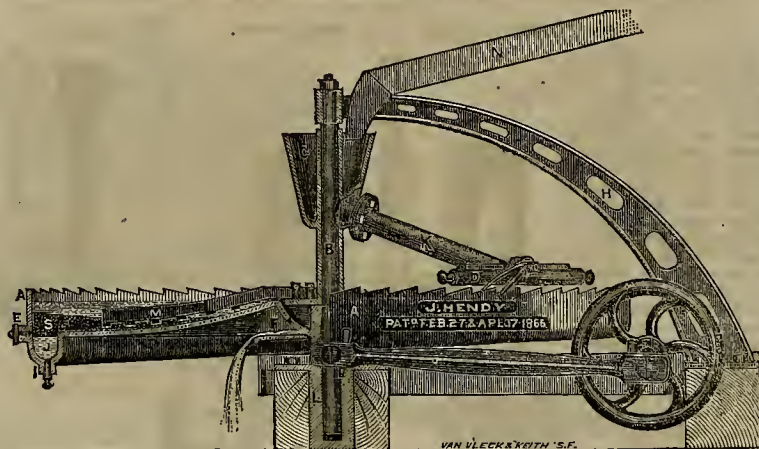
D. E. HAYES, Secretary.  
San Francisco, June 12, 1867. 24v14-2m

### Cholera---Perry Davis' Vegetable Pain Killer.

MR. PERRY DAVIS—Sir:—The benefits I have received from the use of your invaluable remedy, the Pain Killer, induces me to pen a word in its praise. Experience has convinced me that for Headache, Indigestion, Pain in the Stomach, or any part of the system, severe Chills, Whooping Cough, Colic, Hysteria, Cholera, Cholera Morbus, Diarrhoea, Dysentery, Toothache, &c., there is nothing better than the Pain Killer. I have this hour recovered from a severe attack of the Sick Headache, by using two teaspoonfuls, taken at thirty minutes interval, in a wine glass full of hot water. I am confident that through the blessing of God, it saved me from the cholera during the summer of 1843. Travelling amid dust, toil, change of diet, and constant exposure to an infected atmosphere, my system was daily predisposed to dysentery attacks, accompanied with pain, for which the Pain Killer was a sovereign remedy. One tea-spoonful cured the worst case in an hour, or at most, half a day! I have heard of many cases of dysentery being cured by its use. For the teeth, it will stop the toothache. Gratitude, and a desire for its general use, has drawn from me this unsolicited testimonial in its favor.  
D. T. TAYLOR, Jr., Minister of the Gospel.  
Sold by all Medicine Dealers every where. 25v14-1m

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## HENDY'S LATEST IMPROVED CONCENTRATORS,



### FOR GOLD AND SILVER ORES,

With Revolving Stirrers and Rotary Distributor.

Can be seen in Operation at the Union Foundry, First St., San Francisco.

### Directions for Operating Hendy's Concentrators:

The sulphurets are drawn off while the Concentrator is in motion, in the following manner:  
FIRST—Set the Pan, A, level, by its inner rim.  
SECOND—While in operation, keep the Pan, A, about half full of sulphurets. [See Figure 2, marked S.]  
THIRD—Open the gate, E, sufficiently to discharge the sulphurets as they accumulate over the amount above mentioned.  
FOURTH—The crank shaft to make 200 to 220 revolutions per minute.

The above directions, if followed implicitly, are all sufficient. But, strange as it may appear, the proprietor has found that, in certain cases, they have, owing to the carelessness or to the ignorance of the operators, failed to serve as a complete guide. He, therefore, in the present edition of his circular, insists upon their being followed to the letter; and in order that there may be no mistake in future, he thus elaborates and explains them:

First, then: Unless the pan is level, it is out of the question to expect it to do its duty. One would imagine that the slightest possible examination of the illustrations would be sufficient to show this. Yet, in our case, where the machine did not work satisfactorily, it was found that no regard whatever had been paid to this point! The word level is in itself precise; it admits of no latitude, and cannot be misunderstood. Nothing is easier, to a mechanic, than to place the pan absolutely and mathematically level. It cannot be necessary to dwell further upon this point.

Direction Second, viz:—"Keep the pan about half full of sulphurets," has also, in some cases, been disregarded. A moment's reflection will point out its importance. The operation of the machine is such, that grains of any kind, whatever may be their size or weight, will seek the periphery of the pan, and unless discharged, will there remain, until other grains of greater specific gravity take their place. Of course, then, at the starting of the machine, and for a short time thereafter, the periphery will be partially filled with sand. It is therefore necessary to allow a quantity of sulphurets sufficient to completely occupy that space to accumulate, before the gate is opened, and their discharge commenced. It is obvious that they will otherwise be accompanied with more or less of sand. Once properly commenced, the discharge will be continuous. It must be regulated, however, by the richness, in sulphurets, of the pulp under treatment. A little practice will enable the operator to gauge it without difficulty.

After what has been said, direction Third requires no further explanation. Direction Fourth is, to a mechanic, sufficiently explicit.

These concentrators can be set in pairs, for which a single crank shaft will suffice. Two such pairs can be so arranged as to require a driving shaft of only six feet in length.

The guaranteed capacity of each machine is five tons every 24 hours. Eight tons, however, can be and has been put through in that time. The small proportion of sand which the sulphurets carry, when thus rapidly concentrated, is not an objection but rather an advantage, in case the operators themselves intend to work them. Either in roasting or in pan working, a small admixture of sand is unquestionably an aid. But if the sulphurets are being prepared for sale, they must of course be clean. In this case, the discharges from four machines can be conducted into a single additional one, and the concentration thus be made complete.

The proprietor has recently still further improved the machine, by the substitution of an iron frame for the former wooden one. While nothing is added to its weight by the change, it is thus made stronger and more compact; and at the same time the labor of setting it up is considerably lessened. He flatters himself that these added advantages leave nothing further to be desired as regards the perfecting of the machine.

### References:

Reference is made to the following mills, which have HENDY'S CONCENTRATORS in use:

EMPIRE MILL.....	Grass Valley, Nevada County.
CONEY & BIGELOW MILL.....	Jackson, Amador County.
SPRING HILL MILL.....	Amador, Amador County.
GOLDEN GATE MILL.....	Volcano, Amador County.
GOLDEN RULE MILL.....	Stewart Flat, Placer County.
BENTON MILL.....	Bear Valley, Mariposa County.
LOUISIANA MILL.....	Coulterville, Mariposa County.
PEOPLE'S MILL.....	Alleghany, Sierra County.
TYRON & CO'S MILL.....	Prescott, Arizona.
WOOLSEY & CO'S MILL.....	Prescott, Arizona.
NOYES & CO'S MILL.....	Prescott, Arizona.
GUADALUPE & SACRAMENTO G. & S. M. CO.....	Sinaloa, Mexico.

RECENTLY ORDERED FROM THE UNION IRON WORKS:

VEATCH, VALENTINE & CO., Commercial Mill (4 Concentrators).....	Nevada County.
GOULD & CURRY G. & S. M. CO. (4 Concentrators).....	Virginia City, Nevada.
VULTURE CO. (4 Concentrators).....	Prescott, Arizona.
MIDAS MILL CO. (4 Concentrators).....	Virginia, Montana.
PLYMOUTH ROCK MILL CO. (2 Concentrators).....	Mariposa County.
B. F. BROWN (1 Concentrator).....	Melbourne, Australia.
MOREY & SPERRY (1 Concentrator).....	New York.

And in use in many other parts of this coast.

These Machines are made of iron, thoroughly constructed and ready for immediate use. For description, etc., send for Circular.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit.

### CAUTION.

All of HENDY'S PATENT CONCENTRATORS are marked thus:

"J. HENDY, Patented February 27th and April 17th, 1866."

Orders or letters of enquiry, address,

JOSHUA HENDY, Patentee,  
Union or Fulton Foundry, San Francisco.

March, 1867.

## W. T. GARRATT, City BRASS AND BELL FOUNDER

Cor. Mission and Fremont sts.,  
SAN FRANCISCO.

Manufacturer of Brass, Zinc, and Anti-Friction or  
Babbet Metal Castings;  
CHURCH AND STEAMBOAT

BELLS,

TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS,

Steam, Liquor, Soda Oil, Water and Flange Cocks, and  
Valves of all descriptions, made and repaired. Hose and  
all other Joints, Spelter, Solder, and Copper Rivets, &c.  
Cauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZLES

For Mining purposes, Iron Steam Pipe furnished with Fit  
tings, &c. Coupling Joints of all sizes. Particular attention  
paid to Distillery Work. Manufacturer of "Garratt's Patent  
Improved Journal Metal."

23" Highest Market price paid for OLD BELLS, COPPER  
AND BRASS. 61r

## Foundry for Sale.

A One-half Interest in the

UNION IRON WORKS,  
SACRAMENTO,

Owned by William R. Williams, is offered for sale on the  
most favorable terms.

## A Good Bargain

May be had, as the proprietor is going home to Europe. It  
is seldom that so good an opportunity is offered for a sure  
and permanent investment. The business of the establishment  
is exceedingly flourishing, as can be shown. The  
Shop is of brick, new and well built. The lot is 85 feet front  
by 163 feet in depth, in a good location for this business, on  
Front street, between N and O streets.

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## Pacific Mail Steamship Co's

STEAMSHIPS FOR

NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11  
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PANAMA, connecting via Panama Railroad, with one of  
the Company's splendid steamers from ASPINWALL for  
NEW YORK.  
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30 days.

On the 10th, 19th and 30th of each month that has  
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Steamer leaving San Francisco on the 10th touches at  
Manzanillo. All touch at Acapulco.

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Atlantic Co.'s steamer for St. Nazaire, and English steamer  
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Connecting with OCEAN QUEEN, Capt. Maury.

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An experienced Surgeon on board. Medicine and attend-  
ance free.

These steamers will positively sail at 11 o'clock. Passen-  
gers are requested to have their baggage on board before 10  
o'clock.

Through Tickets for Liverpool by the Canard, Inman and  
National Steamship Lines, can be obtained at the office of  
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For Merchandise and Freight for New York and way  
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The COLORADO will be dispatched July 4, at noon,  
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YOKOHAMA and HONGKONG, connecting at Yokohama  
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run according to directions, to give 20 per cent better re-  
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will refund the money if they will not perform what is  
claimed for them. Machines with copper plates, will cost  
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At Booth & Co's Union Foundry, up stairs. Parties pur-  
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prove the working of the machine.

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HUNTER'S EUREKA AMALGAMATOR.  
For sale, the right to build and use in mills. A working plan  
will be furnished each purchaser. Five machines can be  
seen in operation at the Eureka Mill, Grass Valley. The  
cost of the iron for the machine, without the iron-box, is  
about \$100. The box will answer of wood.

By reference to the Mining and Scientific Press of May  
25th, a full description of the above Machines may be found.

For particulars, send for Circulars, or address  
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A Journal of Useful Arts, Science, and Mining and Mechanical Progress.

DEWEY & CO., PUBLISHERS,  
And Patent Solicitors.

SAN FRANCISCO, SATURDAY, JUNE 29, 1867.

VOLUME XIV.  
Number 26.

For Table of Contents, see last page.

OUR FOURTEENTH VOLUME CLOSES with to-day's issue, and next week will present a favorable opportunity to commence subscriptions and advertising for a new volume. Those who desire to give their business a wide circulation among reading and intelligent people, and especially among miners and mill men, will do well to secure the advantage of the advertising columns of the MINING AND SCIENTIFIC PRESS. This paper finds its way into our principal hotels, reading rooms, in all college and other schools, etc., and bound volumes and monthly parts are found in the saloons of all the river and ocean steamers. The paper is also received by large numbers of scientific persons and societies, and mining men in all parts of the world. More volumes of this paper are bound for preservation and future reference than of all the other periodicals on the Pacific coast put together. Now is the time to subscribe and advertise. A glance at our voluminous index for the past six months, will afford the stranger to our columns a very good idea of the character and variety of the subjects discussed in this paper. It will be observed that our attention is devoted to the useful rather than ornamental—a feature which we believe is rapidly growing in favor with California readers generally.

**SANTA CLARA COLLEGE.**—The sixteenth annual commencement of this institution took place on Tuesday and Wednesday last. The exercises were unusually spirited and interesting. The various addresses bore high testimony to the excellency and thoroughness of the system of instruction pursued at this institution.

The first literary exercise was a critical essay, by J. T. Rogers, entitled "History," which evinced a marked degree of talent and research. "The Carboniferous Epoch," by Jos. Wiley, was the title of another subject, which was handled in a manner which would have done credit to even a professor in the difficult science under consideration. "The Patriot's Cry," by Joseph McQuade, was a heart-stirring and well written poem. "Mother," an elegy, by R. Gray; "The Equilibrium of the Three Kingdoms of Nature," by A. L. Sage; "The Chinese in California," by T. A. Sutherland, spoken by James Hermann; "The Tax on Education," by W. B. Murphy; "Regicides," by A. Sweet, and "Our Martial Progress," by C. C. Arqués, were each excellent in their way. The exercises continued three days, and were interspersed with music and domestic entertainments. The degree of A. M. was conferred upon S. A. Lyon, A. B. The degree of S. B. was conferred on L. Sage and Jos. Wiley.

The number of students connected with this institution is 216, which is one of the most flourishing and thorough institutions of learning in the State.

We regret that our inability to be present prevents a more extended notice of the exercises. We shall endeavor to remedy this defect another year.

## Kirkup's Patent Spike.

We herewith present our readers with an illustrated description of a newly invented spike, to which we made a short reference some four months since. The advantage of such a means of securing rails to their supports, especially on the dry plains of California, and the arid deserts between the Sierra Nevada and Rocky mountains, must be apparent to the most casual observer. Great difficulty is found in keeping the ordinary snake-headed spike in place in all dry climates; but with a spike constructed after Kirkup's patent, it would seem that this difficulty must be pretty effectually obviated.

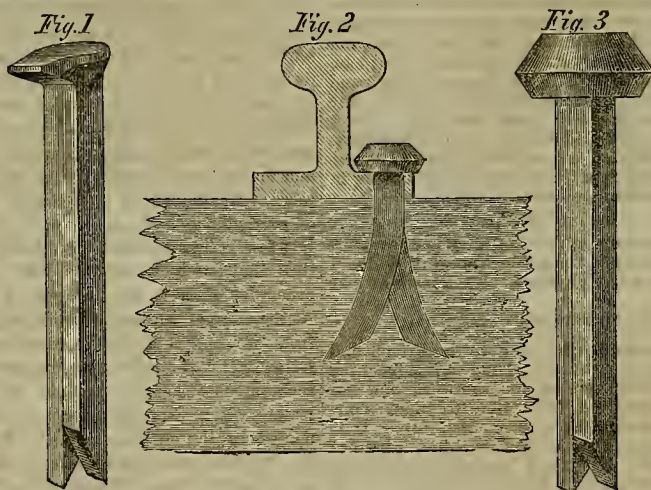
In the illustration, Fig. 1 represents a "snake-headed," and Fig. 2 a "round-headed" spike, of this description. The spike is split from its pointed end in the direction of its length, and the two prongs

does the ordinary spike. The spike, however, can be readily drawn, and it requires but a blow of a hammer to straighten the prongs, when it will be ready for use again."

This invention was patented on January 2, 1866, by Launcelot Kirkup, of Brooklyn, N. Y., and it has also been patented in the principal European countries. The entire invention has been assigned to "The International Patent Bolt Machine and Split Spike Company," and any further information concerning it may be obtained of the President of the company, H. A. R. Moënat, 71 Broadway, New York City.

**THE HUMBOLDT RIVER.**—Some considerable attention is being paid to the utilization of our interior rivers. If we are not mistaken, a steambot is already in process of construction for the navigation of the upper waters of the Columbia river.

It is also thought that the Humboldt river,



KIRKUP'S PATENT SPIKE.

are beveled in alternate directions. When the spike is driven into the sleeper the two prongs diverge in opposite directions, the chisel edge cutting the way for each prong, and the bevel edge throwing it outward. With a  $4\frac{1}{2}$  inch spike the prongs diverge about  $1\frac{1}{2}$  inches. It can be very readily understood that a spike having the position in the sleeper shown in Fig. 3 will retain its hold against any casual displacement incident to the jarring or trembling of the rails occasioned by passing trains, and the expansion and contraction occasioned by heat and cold.

The *American Artisan*, in which this spike was first described and illustrated, says of it: "We are informed that the saving in weight of metal per mile over the ordinary spike amounts to 1,750 pounds, and that the power or weight required to draw a "snake-headed" spike of the above construction which is driven outside the rail, is about 5,986 pounds, and the "round-headed" spike, which is driven through an eye in the flange of the rail, about 7,656 pounds; whereas experiment shows that the power or weight required to draw a spike of ordinary construction is 1,960 pounds, thus showing that it requires about three times the power to draw the split spike that it

which has its course altogether in Nevada, may, at small cost, be made navigable for nearly the entire year; thus bringing into cheap steam communication the eastern and western portions of Nevada. According to a late number of the *Owyhee Avalanche*, a party, desirous of testing its navigable qualities, recently constructed a small boat near the upper portion of the river, and proceeded downward along its course. For many miles the river was found to be two and a half to six feet in depth, but very crooked and about sixty feet in width. The character of the river is very uniform from near its source to its mouth, with only occasional rapids and shallows. To render it navigable, two or three dams would have to be removed, and a number of wing-dams constructed to deepen the channel. On approaching its mouth, the party could not find a passage into the lake, owing to the rank growth of the tules; yet it is said that an outlet forty feet in breadth, opening into the lake or sink is known to exist, and has been passed through by settlers and Indians.

**THE Merchants' Floating Dry Dock** was launched in our harbor on Thursday.

**THE MANAGEMENT OF STEEL;** by George Ede, employed at the Royal Gun Factory Department, Woolwich Arsenal, (Eng.) Revised and enlarged from the fourth edition, by D. Appleton & Co., New York, 1867. For sale by A. Roman & Co., San Francisco.

The above publication shows the work of a practical mind. Mr. Ede is no mere theorist; but is one who has a thorough practical knowledge of what he writes. The title, "The Management of Steel," does not at all comprehend the full scope of the work. The writer treats upon both iron and steel, in nearly all their forms, conditions and manipulation. Though not exhaustive, it nevertheless embraces about everything that is essential to be known to the practical iron worker. It treats upon the manufacture of iron and steel, the choosing of steel for tools, annealing cast-iron and steel, hardening and tempering of the same, expansion and contraction of steel, shrinking of cast iron and steel, the case-hardening of wrought iron, toughening of steel for guns, shot, railway bars, etc.

This little work, of only 220 duodecimo pages, will be found an inestimable treasure to young mechanics who wish to make themselves better acquainted with the materials upon which they work, and out of which their tools are made. The importance of such information, both to young apprentices themselves and the world at large, can scarcely be estimated. Science and the arts would thereby be advanced, while the power of the hand to contrive, and the hand to execute, would be greatly enlarged. Valuable inventions would multiply, while those which perish at their birth, and see the light only to impoverish instead of increase the wealth of the inventors, would be few indeed.

**EFFECT OF ELECTRICITY ON MOLTEN IRON.** Of all the remarkable applications of electro-magnetism, which have recently been made, perhaps the most extraordinary is that of its introduction into a mass of molten iron! It is said that this experiment was recently tested at one of the leading iron work establishments in Sheffield, with most unexpected results and success. The effect is described as surprising; the metal appears to bubble and boil, while the perfect fusion is much expedited, and the quality of the iron greatly improved in toughness and hardness. It appears that much of the impurity that remains after the ordinary process, is driven out by the action of the magnetic current; hence it is inferred that this new application of electro-magnetism, may be regarded as full of promise in this direction. It is to be hoped that further particulars may soon be made public; and in the meantime it is suggested that it is a case for the application of Wilde's electro-magnetic machine. If there is anything in the alleged discovery, it would seem that with the powerful currents thereby generated, the results must be proportionally important. The accounts do not describe the manner in which the current is introduced into the molten mass. The inference, however, would seem to be that the furnace is isolated, and kept fully charged by a powerful battery. Smee's battery was used in the instance referred to.



## Communications.

IN THIS DEPARTMENT we invite the FREE discussion of all proper subjects—correspondents alone being responsible for the ideas and theories they advance.

[Written for the Mining and Scientific Press.]

## The Universal Exposition.

BY A. S. HALLIDIE.

PARIS, May 7, 1867.

The general display of machinery at the Exposition is very great. France of course comes in for the chief share; but England has a better showing of machinery in motion. There is very little new from anywhere; but the United States, "poorly represented" as it is, nevertheless presents many more new things, in proportion to its display, than any other country.

## THE DISPLAY OF LOCOMOTIVES.

There has been and is a marked improvement in French machinery. One does not see so much of nice complication of detail as in the London Exhibition of 1851; but there is a much greater simplicity, economy and solidity; and it gives evidence of the fact that France is turning her attention more to practice and less to the theory. There are a number of locomotives exhibited by France, one of which, by Ernest Gouin & Co., made for the Northern Railroad, has six wheels on each side, coupled together—diameter of wheels three feet four inches—driven by four cylinders; total weight about sixty tons. There is another locomotive, exhibited by the Paris and Orleans R. R. Co., named the "Cantal," which is beautifully finished, with proportions of parts excellent. It has five wheels on each side, coupled, diameters 3 feet 5½ inches, driven by two cylinders 19 inches diameter by 23½ inches stroke. The boiler has 280 tubes 16 feet 3 inches long; total weight of engine, about 60 tons. There is a great variety of locomotives exhibited by France and Belgium, nearly all of which weigh from 40 to 60 tons each. Belgium produces some well finished locomotives; but nearly all have a great overhang, of eccentric rods, etc., etc., which give them a very wide appearance. By far the finest locomotive in the Exposition is one exhibited by the Grant's Locomotive Works, of Patterson, New Jersey. This locomotive is the envy of all machinists here, and is generally praised both for its beauty of proportion and excellency of construction and finish. It is stuck out in a shed, outside of the main building, when it should occupy the most advantageous and prominent position. In this particular, as in others, we are behind.

## OUR NATIONAL COMMISSIONERS

Are also behind; and the Commissioner from California has not yet shown himself. There is perhaps some excuse for our being backward, and some justification for the complaint that our department is not fully opened for such a long time after the general opening. The barriers in our portion of the United States were not taken down until Saturday last—six weeks after the general opening!

## RAILWAY CARRIAGES.

France and Germany exhibit some very comfortable and elegant railway carriages, many of which are two stories high. Some of the German first-class are furnished with tables, water-closets, etc., to each compartment. The second-class carriages are well fitted up, and certainly comfortable enough to suit almost anybody; but being arranged like a series of stage coaches, into which one is locked, there is a feeling of insecurity which one does not realize in the long, open railway car in the United States—where a person can escape from car to car in case of fire or accident, and be at all times in communication with the guard. Nearly all the German lines have four classes.

## DISPLAY OF MACHINERY.

The general display of machinery is very great, especially in the line of machine tools. There are planing machines, drilling, turning, boring and shaping machines in abundance. Ducommun & Co., of Mulhouse, France, exhibit, among other tools, a fine large lathe, which takes in seven feet diameter, with a bed forty feet long; another, a planing machine, with bed seven feet wide,

twenty feet long. There is a most beautiful lathe for turning ivory, exhibited by Germain, of Paris. It is finished with the most delicate polish, and although it looks more like an ornament than a useful tool, yet it is used and does its work well.

Grafteustaden exhibits a fine horizontal engine, four-foot stroke, 24-inch cylinder; also a combined drilling and planing machine, the bed of which is forty feet long and six feet wide.

Farcot & Sons have a very fine and beautifully finished horizontal engine, with two cylinders 36-inch diameter, five-foot stroke; this forms quite an attraction, from its size and elaborate finish.

## HOISTING MACHINERY.

There are a number of direct-acting engines, for hoisting from mines, the general arrangements of which are, that the cylinders either set directly under or over the winding drums, and connect with cranks, keyed on to main shaft of winding drums. These are mostly intended for flat ropes, and the drums usually have a diameter of eight to nine feet on the barrel, and measuring about 30 feet diameter, outside of flange, according to the depth proposed to sink. I do not find any very great improvement, in detail, over our own hoisting apparatus, except that the drums on which the ropes wind have a large diameter, which of course is all-important for the economy of the rope. The display of wire rope is very large—larger than any other kind of ropes; and it is really astonishing how this branch of manufacture—which was only commenced about 35 years ago by Mr. Andrew Smith—has sprung into existence everywhere.

## ROCK-DRILLING MACHINES.

Since the tunnel at Mount Ceniz has reached its present enormous length, the necessities for boring and drilling by machinery have called for a number of ingenious contrivances for obtaining the requisite power without the aid of steam, and there are several machines in the French department devised for this purpose.

## THE DIAMOND DRILL.

There is a boring machine—Class 47, No. 49, French department—which is said to have done good work on the southern French railroads, and which bores a two-inch bore, 3½ inches deep, per minute, in ordinary hard rock, running at 250 revolutions per minute. The cost of the machine, complete, is \$500. The drill has diamond points and revolves; duplicate cutters cost \$35; the old diamonds will fetch here \$15. I saw some work it had done in hard quartz rock, where it bored a good clean hole. The machine sets on a frame suitable for boring in any direction and at any angle.

## MINING VENTILATORS.

There are a number of models of systems of ventilation for mines; none of which I saw show any practical idea ahead of our own.

## MACHINERY FOR CUTTING COAL.

There are exhibits in both the French and English departments. The English machine seems best adapted for the work, and has been improved from time to time, as circumstances and requirements arose. It is probably not the kind of machine altogether required; but it is a material advance, in point of economy, for the extraction of coal over the hand labor usually employed. It has been adopted by a great many coal mining companies in Great Britain. The main objection I judge to be its weight and size. The necessity for a machine which will do the work now done by hand, at great cost, and sometimes unnecessary delay, and that will do it better and with less loss of coal, is felt so strongly in Europe, that some of the coal mine owners have offered a large premium for the best machine of this kind.

There is a coal-cutting machine exhibited by Messrs. Jones & Levis, of England, which seems to be a good machine. It cuts at any angle to a depth of three feet; the cutter is 1½ inches wide. It makes about 100 strokes per minute, and cuts out twelve yards of coal per hour, employing about seven-horse power to drive it. The machine weighs about 12 cwt., and costs about \$500, complete. On my return to England, I propose to examine more into the application of these machines, practically, and will inform you of the result.

## MISCELLANEOUS DISPLAYS.

There is a large display of iron work from all parts of Europe. There are various blocks and pyramids showing the proportions of gold produced by different countries. But California is not there. In fact California, comparatively speaking, is not anywhere! There are a few bottles of wine stowed away in one part of the building. Harrison's pump (which only started to-day) in another portion; woolen goods (a good display) in another; Hallidie's wire rope in another; and the photographic views of Yo-

Semite on the wall, with no explanation of who by, what for, or what it is. Having no explanation, is characteristic of the whole Exhibition. I suppose the object is to effect a better sale of catalogues; but when you turn to them you are still as much in the dark as ever, so far as details are concerned. More by and by.

[Written for the Mining and Scientific Press.]

## The Reese River Country and its Mines.

BY A. J. HOWK.

[Continued from Page 386.]

## ROADS TO THE "GREAT SOUTHEAST."

Until recently, the principal road traveled in reaching this section from the western part of the State and California, has been by the Overland Mail route, via Austin; but the indirectness of the route has caused two other routes to be looked out, which were mentioned in a former letter. Both these roads leave the overland at White Rock, and are yet unfinished east of Mammoth District; however, the entire route to Hot creek is being put in the best possible condition, and when completed it will be the most direct and best route to the "Great Southeast." Miller & Ripley's stage is already running on the route from Virginia City to Belmont. A large force is employed at different points on this road, principally at the expense of citizens of Mammoth; and before this is published, the traveling public will be invited to use it free. The other road, via Ophir Cañon, will be finished during the summer; but, as I have previously said, it is objectionable for heavily-loaded teams, especially those destined for Belmont and further east. Still it is a necessity for Ophir, and a great convenience to Northumberland and the traveling public visiting these places. Two articles have been published by the Reese River *Reveille*, grossly misrepresenting these routes, particularly the one via Cloverdale, which that paper characterizes as nearly destitute of water and "almost impassable in consequence of sand." Such statements, made in utter ignorance of the country, are quite as bad as deliberate misrepresentations, and not in harmony with the *Reveille's* statement, that they "wish to discuss the question of routes fairly and upon facts." However, but few residents south of Austin believe that they wish to discuss this question otherwise than in the interest of Austin. At the close of the article previously quoted from, we find their desire revealed in the following: "If mail routes are asked for to accommodate any portion of the Reese River section, this city (Austin) should be named as the starting point." What say the people of the rich districts of the Mammoth and Shoshone Ranges when they are told that their California mails must come by a circuitous route, over one hundred miles out of the way, in order to pass through Austin? I know that a saving of three or four days travel on the trip to Belmont is a large item to teamsters in these days of low freight, and, consequently, I wish to speak fairly for their benefit. I have no ranch, neither have I any interest to be advanced by directing travel to the Cloverdale route. Very many of those who visit the "Great Southeast" will desire to pass through Austin, either going or returning, and there is no great objection to that road for those who have plenty of time to spare.

The route via Austin follows Smoky Valley, on the Ophir and Austin stage road, to the vicinity of Spaulding's salt marsh; thence it strikes diagonally across the valley to the mouth of Charnock's Pass, in the southern part of Northumberland District. This Pass is one of the best natural grades in that part of Nevada, and will also be used by the White Rock and Ophir Cañon road when the latter is completed. After leaving Charnock's Pass, we soon reach Pine creek, a fine stream running eastward into Monitor Valley. Here the road branches—one branch striking directly across Monitor Valley twelve miles to Barley creek and

Alatony Pass, where an excellent graded road is being built by Messrs. Clark & Co. on the main route to Hot creek and Pahrana; the other leading south, down Monitor Valley, to Belmont. Another route, diverging from the main one soon after entering Smoky Valley, crosses the Silver Bend Range through Clipper Gap, nine miles north of Northumberland. This has been used, thus far, by loaded teams through to Hot creek and Pahrana, in consequence of there being no road built over the Danville Range between Belmont and Hot creek. The excellent one now being constructed will attract the travel that way. At Barley creek, all the roads leading from the west (except the Clipper Gap) unite and pass eastward through the Hot creek region, and directly on to Reveille and Pahrana; thence diverging south to Prescott and Fort Mohave in Arizona.

## PHILADELPHIA DISTRICT.

This famous district, better known as Silver Bend, is, at the present time, the center of attraction for the migratory and restless miners of Nevada. It is located on the eastern side of the Silver Bend Range, in latitude 38° 20', thirty-four miles south of Northumberland, and is eighty-five miles distant from Austin, in a S.S.E. direction. The first discovery of this district was in the fall of 1865. But little attention, however, was given it until one of the original party (formerly Recorder) returned with others, in April, 1866, and reorganized the district. In the ensuing month of May, David E. Buel followed, and henceforth Belmont (like Austin, which owes a large share of its early progress to Buel) grew rapidly, until a population of twelve hundred occupied the district, where one year ago but three or four white men had ever trod its hills of gray slate. The usual energy and enterprising spirit of Buel impelled him to invest here, and by the middle of September he had his mill of ten stamps in operation. The mill is constructed for wet crushing, and has no facilities for roasting the ore; consequently, but little more than half the silver is saved. Notwithstanding this, over \$120,000 has been produced by it during the six months it has been running. This bullion was produced from about 1,200 tons of ore from the Highbridge lode.

[To be Continued.]

**PYROTECHNICS.**—As the national jubilee is approaching, in the celebration of which pyrotechnical displays always form a marked feature, it may be interesting to many of our readers to know how some of the brilliantly-colored lights are made which are exhibited in the rockets, Roman candles, etc. The ingredients for each of these different colored stars for rocket heads, etc., are made separately, being finely pulverized, and made up into a thick paste with water. When of proper consistency, the mass is rolled into suitable thickness and punched into separate pieces of the size desired for each separate star, and then carefully dried until quite hard. The different colors are prepared, with some slight variations, as follows:

**Red Stars.**—Dried nitrate strontia, 4; chlorate potash, 2; sulphur, 2; black sulphide antimony, 1.

**Green Stars.**—Nitrate baryta, 5; chlorate potash, 2; sulphur, 2; black sulphide of antimony, 2.

**Lilac Stars.**—Chlorate potash, 49; sulphur, 25; chalk, 20; black CuO, 6.

**Purple or Blue Stars.**—Chlorate potash, 42; pure nitrate potash, 22; sulphur, 22; CuO, 10.

**White Stars.**—Saltpetre, 16; sulphur, 4; black sulphide antimony, 5.

Blasting powder, finely pulverized, is meant in the following receipts:

**Tail Stars.**—Blasting powder, 8; sulphur, 8; saltpetre, 8; coarse charcoal, 8.

Charge for 2 oz. Rockets.—Blasting powder, 20; charcoal, 6; saltpetre, 4. A moderate amount of blasting powder for the head to light and disguise the stars.

Composition for Roman Candles between the stars lying on powder of the best quality.—Saltpetre, 5; blasting powder, 1½; sulphur, 1; sand, 1.

**Spur Fire.**—Saltpetre, 4½; sulphur, 2; finely powdered and mixed, and then gently rubbed with lampblack, 1½; pack in cases six inches long and three-fourths internal diameter.

**BUILDING IN CHICAGO.**—It is said that three millions of dollars' worth of new buildings in Chicago, that had been in contemplation the present season, have been abandoned on account of the eight-hour movement.



## Mechanical.

**THE PRODUCTION OF IRON.**—The total production of the blast furnaces of Great Britain amounts to about 5,600,000 tons—which is about one-third of the entire iron product of the world. France produces a most inconsiderable quantity in proportion to her population, the amount not exceeding 800,000 tons—less than the product of the single county of South Staffordshire, England. The annual make of Spain is next to nothing—8,000 tons; while that country is actually rich in the mineral, and forms a population of 15,000,000 souls. Sweden and Norway have long been celebrated for their iron mines, which produce a quality of iron inferior, in the aggregate, to that of no portion on the globe. There are 500 iron mines worked in Sweden, which, in 1834, yielded 500,000 tons of ore. But very little bar iron is manufactured there—not over 300 tons. The make of plates is about 5,000 tons, and about the same quantity of cast steel by the Bessemer process.

**THE ART OF GRINDING TOOLS.**—More than one-half the wear and tear and breakage and bother of dull tools comes from a lack of proper knowledge and practice in grinding. All steel, however highly refined, is composed of individual fibers laid lengthways in the bar, held firmly together by cohesion; and in almost all farm implements of the cutting kind the steel portion which forms the edge, if from a section of a bar, is laid in and welded to the iron longitudinally, so that it is the side of the bundle of fibers hammered and ground down that forms the edge. Hence, by holding on the grindstone all edge-tools, axes, drawing-knives, knives of reapers, scythes, knives of straw-cutters, etc., in such a manner that the action of the stone at right angles with the plane of the edge, or, in plainer words, by holding the edge of the tools square across the stone, the direction of the fibers will be changed, so as to present the ends instead of the side as a cutting edge; by grinding in this manner a finer, smoother edge is set, the tool is ground in less time, holds an edge a great deal longer, and is far less liable to "kick out" and break.—*Germantown (Pa.) Telegraph.*

**INVENTIONS NEEDED.**—A correspondent of the *Scientific American* claims that there is money to be made by inventors who will bring forward improvements which are in urgent demand, and of which the following are a few which are suggested: A device to admit air and light, while it excludes dust, through window and door openings. It would be well nigh invaluable in every store of fine fabrics in almost every city of the globe. To railroad cars it would add the last and much needed desideratum for that kind of travel, and suppress its most serious nuisance. A method by which fresh meats can be preserved, similar to canned fruits, and taken to sea. Preserving meats by salting, abstracts a large part of their nutritious qualities. A noiseless application of power to vehicles, to do away with the over-crowd of horses in large cities. A device for heating city railroad cars, omnibusses, etc., other than by stoves. The want of warmth in these vehicles adds largely to the ill health and discomfort of citizens in this latitude. A compact laundry machine, by which family washing and drying can be accomplished in a small space, without exposure to open air. In yards and enclosures of large cities sunlight is generally shut out, and dust abundant.

**STEAM IN LOCOMOTIVE BOILERS.**—The facility with which steam is made in locomotive boilers, is well known to engineers, and is evidently greater than can be attributed to the excess of draft facilities which they possess. The secret doubtless lies in the fact that the motion of locomotives upon the rails assists materially in liberating the steam generated in the lower parts of the boiler, and thus in maintaining a proper circulation of water.

**ICE FOR THE EXPOSITION.**—M. Carre's freezing apparatus has been set up in the park connected with the Paris Exposition, to supply ice for the restaurants. The principle of this machine is the same as that to which we have several times alluded, as used on a small scale in this city.

**RE-INVENTIONS.**—A paper was read at a late meeting of the Institution of Naval Architects, by Mr. McGregor, showing how inventions relating to marine propulsion have been many times re-invented and patented. The examination, undertaken for official purposes, extends over a period of 250 years, embracing over 1,000 patents of this class granted during this time, but had reference chiefly to some 800 granted ten years ago.

First, as regards the power employed for propulsion; he found that aside from steam, ten distinct patents were granted for obtaining the power from animals, thirteen from wind exclusive of sails, six from springs, three from gunpowder, twelve from compressed air, thirteen from gas, and six from electricity. Of the Water Witch style of propulsion, by ejecting water from the vessel, fifty-nine patents had been taken out. Plans for propulsion by discharging in a similar way, gas, fire, or steam, were protected by twenty-nine patents. The paddle wheel itself, under nine patents by animals, thirteen by men, and one by combined action of steam and manual power. Feathering floats have been patented scores of times, every case being almost identically the same in principle and construction.

The screw propeller has a like series of duplicates of inventions where patents for an increasing pitch number five, adjustable pitch fourteen, sixteen were granted for screws to steer with, thirteen for screws in tubes, six for screws and paddles combined, and twelve for the form now called "twin screws." Before the year 1858, 140 patents were taken out for propellers with fore-and-aft motion, and precisely the same plan has been repeatedly patented within the last nine years.

**BERNABE'S IRON COPPERING.**—Admiral Viscount de Chabannes, at Toulon, writes in a published letter that not only is the adhesion of the iron and copper by M. Bernabé's process as employed in the arsenal of Toulon, so perfect that they are not started apart by hammering, bending or breaking, but that if a hole in the copper at any time occurs from abrasion, the part can be re-coppered on the spot, as effectively as before. If this means that a repair of this kind can be effected on a ship's bottom, the method may very well have all the value attributed to it.

**CREOSOTED TIMBER.**—A creosoted sleeper, put down on the Stockton and Darlington railway, in England, in August, 1841, was taken up March 14th, 1867, after nearly 25 years service. The grain of the wood, although slightly discolored by creosote, is as fresh, and apparently as tough as that of newly-sawn timber, and the odor of creosote is as strong as if the wood had just been operated upon.

**A NEW MODE OF BRIDGE CONSTRUCTION.** Among the models exhibited at the Paris Exposition, is one by Thomas Dunn, of Manchester, Eng., illustrative of a mode of erecting a steel bridge by weaving straight bars into a self-supporting structure progressing from the shore, without supports or scaffolding.

**A GRINDSTONE** should not be exposed to the weather, as it not only injures the wood-work, but the sun's rays harden the stone so much as, in time, to render it useless. Neither should it stand in the water in which it runs, as the part remaining in water softens so much that it wears unequally, and this is said to be a very common cause of grindstones becoming "out of true."

**THE WEAR OF WHEELS ON RAILWAY CURVES.**—It is found necessary on some railways having numerous short curves, to have the flanges of the driving wheels of the ordinary 6-wheeled engines, turned anew as often as every six weeks.

**RAILS WITHOUT CHAIRS.**—The Northern Railway of France, on which are employed some of the largest locomotives ever constructed, has been partly relaid with the high-noses or flat-footed rails, spiked directly to the sleepers, the joints being fished, and no chairs being used.

**TANK LOCOMOTIVES** are now fast coming into use on railways. It is believed that the first locomotive of this description was the *Novelly*, constructed in England, by Messrs. Braithwaite & Ericsson.

**THE STEEL BRIDGE** of the Quay D'Orsay, near the Exposition building—the first of the kind yet built—is said to be a failure, having already sustained a deflection of at least three inches to the center.

## Scientific Miscellany.

**TELESCOPIIC DISCOVERY.**—The *Scientific American* is informed that a new double star, supposed to be below the defining power of more than two or three telescopes in the world, has been observed by means of the instrument in the possession of Jacob Campbell, Esq., of Brooklyn. It is almost in a line between Procyon and the companion star by which the defining power of first class telescopes is frequently tested. But although it is a common practice of astronomers to try their glasses by first observing Procyon and then waiting a few minutes for the companion star to come into the field, this new companion, which enters the field before the other, has never been revealed by any of the instruments so often crossed by it. Professor Wiulock, the astronomer at Cambridge, was informed of the discovery, and after some search with the fine Munich telescope of that observatory, detected the new star. The success of European instruments with the new test, is yet to be heard from.

**A FREEZING SPRING.**—Scrope, in his "Volcanoes of Central France," says that near Port Gihand, a short distance from Clermont, in France, there is a natural grotto, in basalt, from the interior of which gushes a small spring of water, near and about which ice is formed, even during the greatest heat of summer. The water is supposed to be cooled by means of the rapid evaporation produced by a current of very dry air, which issues from fissures in the rock which communicate with the grotto. This air owes its dryness to the absorbent qualities of the rock through which it passes. This dry air, in passing over the spring, absorbs moisture from it so rapidly as to keep its temperature constantly at or below the freezing point.

**GLYCERINE**, the substance which constitutes the base of that terribly destructive explosive agent, nitro-glycerine, is a clear, colorless, syrup, and constitutes the main and sweet principle in fats. When pure it has no smell. It is a most useful substance for chapped hands, or for any application where it is desirable to keep the air from reaching the skin, and hence keeping it moist—the great secret in the cure of such cases. It is, perhaps, the best hair oil in the world, and never takes on taint (heat not decomposing it, save at 600 deg.) Besides keeping the hair moist, it has the merit of not being dried by air, but, on the contrary, draws moisture from the atmosphere. Thus it makes a sweet, pure, durable oil for the hair. It is also the principal medicine for ear complaints—especially a dry ear.

**MUCILAGE** is closely allied to gum in many of its properties. It enters into the formation of certain parts of many vegetables, as in linseed, quince-seed, the roots of the mallows, etc., and is the chief constituent of gum-tragacanth. By the addition of sulphuric acid, it is convertible into glucose or the sugar of fruits. Its composition may be expressed by the following formula:  $C^{24} + H^{19}$ .

**WHY WAS IT?**—Two tubs with the same exposure, and about the same size, were standing under the eaves of a house, both nearly full of rainwater. One was a galvanic iron tub, the other a wooden one. In the morning the wooden one was covered with ice a quarter of an inch thick—the other had no ice on it. As there can be no effect without a cause, why was the one tub frozen over and the other not?

**TO DETECT COTTON IN LINEN.**—A mixture of cotton with linen may be detected by unraveling a piece of the tissue, hoth warp and weft, and plunging it into a solution of aniline and fuchsine. It should be taken out, washed, and, while moist, dipped in ammonia. The cotton threads will lose their color, while the linen will remain red.

**SCIENCE** is like the rain from heaven; if a drop of it fall into a gaping oyster, it becomes a pearl; if into a viper's mouth, it turns to poison.

**CHARRED WOOD** is inflammable in proportion to the lowness of the temperature at which it has been reduced. For gunpowder, the charcoal is made very slowly, at a low temperature, and consequently has a very low igniting point, requiring great care to prevent its igniting spontaneously. It is said that by taking years for the process, at a proportionally low heat, the dried and shrunken fiber, penetrated everywhere by air, will ignite at a temperature not far above that of boiling water. A charcoal sufficiently inflammable to be readily ignited by burning paper or shavings, would be a great domestic convenience for lighting anthracite coals, instead of kindling wood. Ordinary charcoal is retailed probably as low as kindling wood, for equal amounts of heating power; and the cost of slow charring, with cheap fuel and chemical aid, on a large scale, could hardly be more; while there would be a saving in freight, and a great advantage in the prompt efficiency of the article.

**CHARCOAL.**—The interesting mystery of the power of charcoal to absorb, condense and change gases to vapors, engages continued investigations. Among the latest investigations reported, the remarkable chemical activity in charcoal saturated with oxygen is displayed in the conversion of moist sulphurous acid and sulphureted hydrogen to sulphuric acid; common alcohol to acetic acid, and amyl alcohol to valeric acid; indicating a power of oxidation extending to a very wide range of effects, but to which ammonia showed an exception. The condition in which oxygen exists so largely and actively in charcoal is yet a mystery.

**THE CONVERTIBILITY OF ELECTRICITY AND HEAT** is illustrated by joining a bar of antimony and another of bismuth, end to end, and passing a current of electricity through them, first from the one end and then from the other. The current passing from the antimony to the bismuth will be found, by proper tests, to part with a portion of its electrical intensity at the junction, and to develop increased heat. That passing from the bismuth, on the contrary, will manifest increased electrical tension, evidently at the expense of the pre-existing heat, for the bar at that point will be colder than before the current passed.

**ZINC AND MILK.**—Vessels made of zinc should never be used for holding milk, as when milk is allowed to repose in contact with this metal, a lactate of zinc is formed, as well as a compound of casein and oxide of zinc, both of which are extremely injurious if taken into the system. A solution of sugar, left to stand a few hours in a zinc vessel, will be found to contain a considerable quantity of salts of that metal.

**FOR NEURALGIA.**—Take two large table spoonfuls of cologne and two teaspoonfuls of fine salt; mix them together in a small bottle, every time you have an acute affection of the nerves, or neuralgia, simply breathe the fumes in your nose from the bottle, and you will often be immediately relieved.

**A BEAUTIFUL NEW PORCELAIN GLAZE.**—A double chloride of platinum and aluminum, obtained by dissolving the metals together in aqua regia (nitro-muriatic acid) is mixed with fine ground Limoges glaze, (a potash alumina glass) as well as with other enamels, producing a variety of beautiful effects. The first named gives a remarkable metallic luster and iridescence in the enamel.

**GREENLAND.**—Mr. Edward Whymper, the Matterhorn climber, and Mr. John Browne, the Rocky Mountain hotanist, have started from Copenhagen on a tour through the interior of Greenland, in the interest of science, and at private expense.

**STRENGTH OF DIFFERENT KINDS OF WOOL.** Fine wool is decidedly stronger in proportion to diameter than coarse wool; and if spun into as large threads as those of coarse wool, which are employed in heavy common cloths, would make a fabric more than three times as durable as the latter.

**SOUND UNDER WATER.**—A bell rung under water has been heard across the breadth of the lake of Geneva, a distance of nine miles.

**NO BUGS.**—It is said that the little bugs which have so annoyed the lovers of raspberries for a year or two past in this vicinity, have not made their appearance the present season; so that people need not be nervous about eating this delicious fruit.



## New Patents and Inventions.

Under this heading we shall mention, from week to week as occasion may demand, New and Important Inventions; also, the List of Patent Claims recently issued from the U. S. Patent Office to inventors on the Pacific Coast, and other Patent Issues which we deem of local interest to readers on this side of the Continent. Most Patents on this coast are secured through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. We are prepared to obtain from Washington, with despatch, copies of any Patent issued.

## PATENTS RECENTLY ISSUED.

63,923.—GANG PLOW.—J. W. Sursa, San Leandro, Cal.

I claim, 1st: The combination and arrangement of the shaft, c, the segment arms, d, d', the axles, g, g', of the wheels, D, D, the hand-lever, h, and the rack, k, for raising and lowering the gang plows, A, A, substantially as herein described.

2d: The arrangement of the draught-pole, F, pivoted to the plow-beams, B, B, and depressed and elevated by the screw, a, substantially as for the purpose set forth.

64,894.—DOOR INDICATOR.—F. E. Mills, San Francisco, Cal.

I claim, 1st: The reversible hox, h, provided with the lettered cover, c, having the hole, h, and the revolving disk, P, said hox containing a series of lettered or blank disks, S, S, adapted to be placed in the sink, t, in the reverse end of said hox, substantially as described for the purpose specified.

2d. The reversible hox, h, in combination with the door glass plate, circular plate, A, having circular opening, B, and semi-circular opening, D, substantially as described for the purpose specified.

65,087.—IMPROVEMENT IN GANG-PLOWS.—Joseph Ingham and James Ingham, of San José, Cal.

What we claim is: The movable piston bars, C, C, with the segments, D, D, wheels, E, E, and pinions, F, F, to raise and lower the plows, substantially as described.

2d, The two-part axle, G, with the vertical connecting-racks, K, K, to make the plows cut to an equal depth, as described.

3d, The eyes, L, L, together with the bar, M, and screw, m, for the purpose of regulating the draft, substantially as described.

The object of this invention is to provide a gang-plow so constructed that the plows may be regulated by the operator from his seat. This is effected by geared wheels and segments for raising and lowering the plows, and regulating their height by an adjusting screw; also, a toothed connection of the axle, that, although the furrow-wheel may be the lowest, the axle will be horizontal; also, to a device for shifting the draft connection from right to left, the whole being attached to a suitable frame mounted on wheels.

65,090.—PUNCHES FOR CAR TICKETS.—Robert J. Kellett, San Francisco, Cal.

What I claim is: a punch, with an attachment, E, or its equivalent, for holding the clippings or chips of tickets, in the manner substantially set forth and specified.

The object of this invention is to provide an improved mode of ascertaining the number of passengers who ride in a public conveyance, the number of fares taken, and the number of tickets sold—or, in other words, to provide for a check on forgetful or dishonest conductors. The device contemplates the use of a series of tickets, combining a number of fares in one, each of which will be indicated by a hole in the ticket until it becomes forfeit. The conductor receives no money unless he gives a ticket, and when he reclaims the ticket, must punch a hole in it, the cuttings of which fall into a box connected with the punch, which is kept locked, and by which cuttings he afterwards settles with the clerk. Different colored cards may represent different prices, etc.

## RECENT INVENTIONS.

AN HYDRAULIC INVENTION.—The Dutch Flat Enquirer says that Mr. Richards, of Michigan Bluff, has recently invented a machine which is likely to create a complete revolution in hydraulic mining, as it is claimed by the inventor to supersede the hose method of conducting the water. The machine is attached directly to the pipe, and by it the stream of water is easily directed in any required direction. The North American Company, at Michigan Bluff, are now using the machine, and are said to be greatly pleased with it. It is said to be cheap and easily managed.

ELECTRICITY IN GOLD SMELTING.—It is reported that a Mr. Adams of Boston, has discovered a method of employing electricity

as an aid in a smelting process for gold, whereby the yield is said to be greatly increased. The inventors claim that the gold exists in such a state that fire will not develop it without the aid of electricity. The claims are so extravagant, however, as to awaken a very reasonable doubt as to whether there is anything whatever of value in the alleged discovery; but the recent and reported successful application of electricity to the purification of cast iron, referred to in another column, will doubtless attach interest to the above announcement as something within the bounds of possibility.

FIELD'S PULVERIZER.—Mr. J. B. Fields, of Jersey City, N. J., has patented a device for crushing and pulverizing, which consists of a rotating cylinder, the inner surface of which is provided with a chilled cast iron or other hard substances for a crushing surface, said cylinders being provided with openings at its sides which are covered with screens and having within it a rotary crusher or pulverizer, the periphery of which is also of chilled cast iron or other hard substance. The crushing or pulverizing surfaces of the hollow cylinder and the crusher within it are of V-form and the former moves rather further than the latter in order to obtain a grinding action, all being so arranged that substances, however hard, such for instance as gold-bearing quartz, may be reduced or pulverized in a perfect manner.

FLINT'S IMPROVED GATE.—Daniel Flint, of Sacramento, has invented a model gate, which can be opened and shut by a person without stepping from his carriage or dismounting from his horse. The principles of the invention are simple, yet ingenious. On the gate being opened by a line attached to a post stationed a short distance from the point to which the gate swings, it is fastened by a self-adjusting latch, and is shut in the same way. A patent has been asked for not only the invention of the gate, but for the latch and the eccentric leverage which is attached to the post on which the gate is hung. Mr. Flint has a gate fashioned after this model on his ranch, near Sutterville, which has been in successful operation for some two months. It can be used with and against the highest wind.

A DARNING MACHINE has been invented, and the greatest wonderment attending it is the fact that the inventor is an Englishman, and not a Yankee! A cotemporary consoles himself, however, with the idea that some Yankee will so improve upon it as to render his idea the principal thing of value about it. The invention is by Mr. E. A. Cowper, of London, and consists of the use of a small rectangular frame, large enough to enclose the hole to be darned, and notched all around its outside, like a saw, and upon which the darning cotton or yarn is wound, in two directions, crossing each other, with a thread in each notch, until the hole is covered. The net-work is then applied to the hole; the article stretched upon the frame and held by its teeth; the whole is then placed beneath the needle of a sewing machine, and the thing is done at once. When done, the frame is cut away and the threads trimmed off close. Surely some Yankee ought to have thought of so simple a thing.

A GAUGE-COCK WHISTLE.—A novel, if not important invention, is announced, which is termed a gauge-cock whistle, which can be attached to any ordinary gauge-cock, and which will, when the cock is opened, produce a whistling sound if steam escapes, a bird-like note with foam, and no sound at all with water. By this device not only the engineer, but all within near vicinity, will be promptly informed whenever the gauge-cock hetokeus danger.

SAFETY BLASTING POWDER.—Tehleisen, a chemist of Wurtemberg, has patented a blasting powder which he calls kaloxilin, and which is not exploded by a blow, a shock, or friction. The carbonaceous ingredient is cellulose, prepared from sawdust of hard non-resinous woods, nine parts, with three parts of charcoal and forty-five parts nitrate of potash.

E. POWER, wood carver and ornamental designer, may be found at Nos. 311 and 313 Market street. Mr. Power executed the ornamental work on the Merchants' Exchange, the Court House at San José, on Stanton's Building, Kearny, near Post street, and on numbers of others of our best structures, public and private. He is one of the best artists in his line on this coast, as his works abundantly testify. See his card in another column.

## Weekly Stock Circular.

Of Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, SATURDAY MORNING,  
JUNE 29, 1867.

## MINING SHARE MARKET.

The mining share market continues to be characterized by marked activity, and during the past week a material advance has taken place in most leading shares. Several companies have recently been added to the list of the Board; meetings of others long dormant have been advertised; and, generally speaking, the future prospects of the claims on the Comstock lode have never been better.

SAVAGE—has been firmly held, and only a few feet changed hands at enhanced rates, advancing rapidly from \$4,275 to \$4,480, and at the close realizing \$4,490. The approximate value of the 2,291 tons of ore extracted during the week ending June 22d is stated to be \$93,363, or \$40.75 per ton. Of this amount, the north mine, on the 7th level—the breast of which are said to look as well as ever—yielded 1,335 tons. The drift from the 6th station toward the new "Potosi strike" has been started, and the favorable developments at this point have been carried some distance further north in good ore. In the northeast drift from the third station, sixty feet east of winze No. 2, good ore was found on the 25th inst. The receipts of bullion for the current month will be fully as large as in May.

CROWN POINT—has gained great confidence, and sold at a marked advance over our last quotations, steadily improving from \$1,815 to \$2,330 per foot, and closing yesterday at \$2,250. The east vein on the 500-foot level has been opened to a distance of 73 feet, and in raising up on this body of ore some 20 feet, the developments continue very favorable. The west drift on the same level is in 190 feet. The timbers have been placed for the 600-foot station, and drifting will be commenced the present week. During the week ending June 21st, 647 tons of ore were raised from the mine, showing an average value of \$35.78 per ton.

YELLOW JACKET—fluctuated considerably, rising from \$1,650 to \$1,750, receding to \$1,690, improving to \$1,720, and closing at \$1,660. We have no information in regard to the condition of this mine.

GOULD & CURRY—shows considerable animation, advancing from \$635 to \$705, and at the close selling at \$715. The following statement of receipts and disbursements, from Dec. 1st, 1866, to June 12th, 1867, has been kindly furnished us by the Secretary:

RECEIPTS.	
Cash on hand, Dec. 1, 1866.....	2,698 45
Bullion account.....	452,890 15
Sundries.....	5,976 03
	\$461,649 63
DISBURSEMENTS.	
Paid amounts due as per annual report.....	14,832 91
Mine labor, materials and freight.....	177,309 96
Mine labor, materials, hauling etc.....	24,867 50
Reducing ores at custom mills.....	50,653 37
General expenses.....	15,304 83
Freight on Bullion, taxes, etc.....	19,121 63
Legal expenses, exchange, etc.....	9,432 70
Cash on hand, June 12.....	53,976 83
	\$461,649 63

The liabilities amount to \$10,145. The ore product for the above period aggregated 13,410 tons; amount reduced, 14,540½ tons. The mine has not changed in appearance for a long time. The east drift, from north branch of fourth station, is still in porphyry, but it is not mixed with gypsum, and can be more easily worked.

KENTUCK—rose from \$525 to \$560, and closed at \$452.50, h 30. The new level recently opened 165 feet below the surface, is said to be improving as the developments continue, and the third floor which is now being opened, exhibits a better quality of ore than was found on the station level. The average product of the mine for the current month has been eighty tons of ore per day, showing a yield of \$55 to the ton. From the 19th to the 24th inclusive, \$30,785.80 in bullion were received at the office in this city, which, added to the previous returns in the present month, swells the receipts to \$76,648.52.

CHOLLAR-POTOSI—has been less active than for some time past, receding from \$475 to \$450, rallying to \$460@467.50, and closing at \$450. We learn of nothing of especial interest from this mine. The shipments of ore to custom mills during the week ending June 22d, amounted to 2,773½ tons. The bullion returns for the current month will fully equal the receipts of May....

BELCHER advanced steadily, with increased sales toward the close, from \$440 to \$550, and closed at \$500.

OPHIR—advanced from \$295 to \$385, s. 30, receded to \$320, rallied at \$345, and closed at \$322.50.

OVERMAN—continues the most active stock on the list, but at declining rates, and is held with less firmness than at the beginning of the week, improving from \$210 to \$275, receding to \$190, and closing at \$205. A number of telegraphic dispatches have been received at the office in this city, from the acting superintendent, Mr. McCullough and Mr. Curtis, the gentleman lately appointed by the majority of the Trustees, who is now endeavoring to obtain possession through the courts, relative to the disputed rights of the several parties. By late advices, we learn that the hearing of the case has been postponed until July 3d. In regard to the present condition of the mine, Mr. McCullough says that the ore course, both on the 350 and 450 feet levels, shows good bodies of sulphurets and native metal; and that the 350-foot level is being carried east through fine ore, and the 450-foot level south, with a breast of 20 feet in width, 15 feet of which it is thought, will mill about \$45 per ton. They extract at present 30 tons of ore per day. So far as we can learn, the developments are pronounced to be of a permanent character.

IMPERIAL—has been very steadily maintained at \$195@200, rallying to \$210, and closing at \$217. The receipts of bullion from the 1st to the 26th inst., amounted to \$52,364.65, as compared with \$40,772.43 received during the same period in May. From the annual report for the fiscal year ending May 31st, 1867, we obtain the following facts: Value of bullion received during the year, \$1,060,054.10, being the product of 40,878½ tons of ore, 29,616½ tons of which yielded an average of \$28 to the ton, and 11,262 tons an average of \$20.49 per ton. The cost of working 28,990 tons of ore, (including charges for hauling from mine to mills), was \$9.48½ per ton, and 11,870½ tons at \$7.84½ per ton, showing a decreased expense of \$1.84 per ton, as compared with the two preceding years. The mining expenses of 29,616½ tons, averaged \$4.36 per ton, and of 11,262 tons, \$3.54 per ton. During the year closing with May 31st, this company disbursed \$396,000 in dividends, as against \$240,000 in the previous year.

GOLD HILL M. & M. Co.—sold at \$240@220.... CONFIDENCE at \$70@62.50, closing yesterday at \$62.50.... BULLION at \$42.50@30.... JUSTIS AND INDEPENDENT CONSOLIDATED has been recently placed on the market, and sold during the past week at \$45@20 per share. This company was incorporated May 19, 1866, consists of 3,000 shares at \$100 each, and the mine is located in the Gold Hill District, Nevada.

SEGREGATED BELCHER—placed on the market within the past week, has been sold to a large extent, ranging from \$30 to \$13 per share, and closing at \$16.50. We are informed that the west drift, on the 200-foot level, shows a large body of ore which will average \$20 per ton. On the west drift, from the 400-foot level, the ledge is forty feet wide, extending the whole length of the mine, and connects with the 200-foot level, the ore averaging from \$22 to \$26 per ton. The same body of ore is found on the 500-foot level, averaging from \$30 to \$35 per ton; and in running east 112 feet on the 600-foot level they reached water, the pump not being of sufficient capacity to drain it; later the Overman and Belcher Companies have drained it. No work has been done for eight months, and previously \$182,000 were extracted in the course of nine months, showing an average of \$24.15 per ton. Operations will be resumed in a few days, and three mills will be employed for the present. There are 160 feet in the mine, and 40 shares to the foot, comprising 6,400 shares.

The aggregate sales of stocks, Legal Tender Notes, etc., since Saturday last, amounted to \$1,554,206.

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No. 23 Third street.

Gold Bars, of whatever size, if well cast, assayed for two dollars, at A. P. MOLLITOR'S Assay Office, 611 Commercial street, opposite United States Branch Mint.

16-14 3m

Brown's Filtering Heater.—For preventing incrustation in Steam Boilers, purifies water from lime or any other impurity, saves fuel, prevents explosions, and protects life and property. The cost of the Filter is soon saved in fuel and boiler-repairs alone. One is in operation at the San Francisco Foundry, Fremont street, where Rights can be procured, or all needed information, an application, in person or by letter, to

AUSTIN A. WELLS, Agent.



## Home Trades and Manufactures.

THE PACIFIC FILE FACTORY commenced operations at No. 53 Beale street about ten months ago, under the management of Messrs. Durning & Fisher, both practical mechanics and workmen, and bringing with them an experience of many years gained in this line of business in the older States. This is the only establishment of the kind on the coast, and is now in successful operation, giving employment to some eight or ten men at an average of \$4 per day to the man.

In addition to the business of manufacturing new files, a full assortment of which are constantly on hand, they are extensively engaged in re-cutting old files, which, after coming through their hands, are acknowledged to be equal to the new imported files, and at a saving of nearly fifty per cent. in their cost. The process of re-modeling is similar to that used in the manufacture of new files. After first being properly annealed, the teeth are ground off; the old file is next re-cut, tempered, and finally reappears as good as new. We understand that the manufacture of reaper and mower sections, to any extent, is also a new branch of business here. We are pleased to learn that this establishment is provided with all the necessary machinery to turn out this class of work as cheap as at the East. This is another step in the right direction. The energy and enterprise of this new firm are certainly deserving of commendation and all due encouragement, and we are gratified to learn that they have received the patronage of the leading foundry and machine shops in this city.

BOWMAN'S WASHING COMPOUND, A. D. Bowman & Co. patentees, is an article recently introduced here from the East, to be used in connection with soap, or as a substitute for it in dish-tub, bath or laundry. It purports to contain no lime or other ingredients injurious to clothes. It is claimed for the compound that it softens the dirt, dispenses with much unnecessary rubbing and the consequent evil results in the process of washing. It also removes paint or grease spots from wood or clothing, and is adapted to any kind of goods and to either hard or soft water—in fact, rendering the former, it is said, as soft as the purest rain-water, saving much time and labor in both kitchen and laundry. Manufactured by Lynch & Parsons, at 128 Fifth street.

**OIL CAKE.**—A large amount of oil cake is being constantly turned out at the Linseed Oil Mill, near the foot of Third street, which might be economically used as food for milk cows and other animals. It is sold at \$30 per ton. About 100 tons are now being shipped to England, where it is in great demand for stock.

**INSURANCE.**—The Peninsular and Oriental Steam Navigation Co., of Great Britain, up to 1848, insured their fleet at Lloyd's, at a cost of 6½ per cent. Since that time they have become their own underwriters, and their losses have not exceeded 1½ per cent. The charge at Lloyd's is probably not in excess of that required to do a safe business. The difference between that charge and the actual loss of the company referred to, who have a fleet of fifty-three large steamers, in addition to more than twice that number of tugs, transports, coal ships, etc., is merely the difference in care and attention between a large company well equipped and drilled for such emergencies, and individual parties, who, feeling no responsibility, are reckless or careless.

A SCIENTIFIC PROFESSORSHIP is to be established in the College of California at Oakland. The chair will be filled by Mr. Rising, a graduate of Hamilton College, and of the scientific school of the Michigan University. He will act as Professor of Chemistry and Natural Science.

## MINING SHAREHOLDERS' DIRECTORY.

(Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals.)

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Oiling and Sale; and Amount and Time of Payment of Dividends.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DELINQUENT.	DAY OF SALE.
Adelle, Sierra Co., Cal., May 29, \$1.00.	June 13—July 15	June 30—July 15
Belcher, Virginia, Nev., May 30, \$1.50.	June 30—July 15	June 30—July 15
Belcher, Virginia, Nev., May 30, \$5.00.	June 30—July 15	June 30—July 15
Bullion, Storey Co., Nev., June 1, \$1.00.	June 30—July 15	June 30—July 15
Camargo, Lander Co., Nev., June 21, \$3.00.	Aug. 2—Sept. 26	Aug. 2—Sept. 26
Chollar-Potosi, Storey Co., Nev., June 21, \$1.00.	June 30—July 15	June 30—July 15
Cinco Señores, Simola, Mex., May 1, \$1.00.	June 30—July 15	June 30—July 15
California, Storey Co., Nev., June 11, \$8.00.	July 21—Aug. 20	July 21—Aug. 20
California, Storey Co., Nev., June 11, \$8.00.	July 21—Aug. 20	July 21—Aug. 20
Chuk Mountain, Nev. Co., Cal., June 18, \$1.00.	July 19—Aug. 3	July 19—Aug. 3
Central, No. 2, Nevada, June 11, \$1.00.	June 30—July 15	June 30—July 15
Chollar-Potosi, Storey Co., Nev., div. 25.	Payable June 15	Payable June 15
Chilpana, Sonora, Mexico, May 28, \$5.00.	June 28—July 15	June 28—July 15
Cordillera, Chihuahua, Mex., April 27, \$1.00.	June 21—July 8	June 21—July 8
Crown Point, Nev. div. \$8.00.	Payable May 15	Payable May 15
Oaney, Lyon Co., Nev., June 18, \$3.00.	July 23—Aug. 10	July 23—Aug. 10
Dios Padre, Alamo, Mex., June 13, \$3.00.	July 15—Aug. 2	July 15—Aug. 2
Oardaneses, Del Norte Co., June 3, \$3.00.	July 10—August 3	July 10—August 3
Empire M. & N., Nev., dividend \$6.	Payable May 15	Payable May 15
Gold Hill Quartz Co., Dividend, \$10.	Payable June 15	Payable June 15
Gold Hill T. & M., Storey Co., Nev., Annual Meet. July 20.	July 20—Aug. 3	July 20—Aug. 3
Julia, Storey Co., Nev., div. \$5.00.	Payable May 15	Payable May 15
Gould & Curry, Virginia, Nev., dividend \$50.	Payable Jan 8	Payable Jan 8
Hope Gravel, Nev. Co., Cal., June 26, \$1.00.	July 30—Aug. 19	July 30—Aug. 19
Hale & Norcross, Virginia, Nev., div. \$125.	Payable May 15	Payable May 15
Hanscom Cop., Del Norte Co., May 21, \$25.	June 2—July 8	June 2—July 8
L X L, Alpine Co., Cal., June 19, \$1.50.	July 19—Aug. 5	July 19—Aug. 5
Imperial, Virginia, Nev., div. \$10.	Payable June 15	Payable June 15
Julia, Storey Co., Nev., June 19, \$1.00.	July 22—Aug. 10	July 22—Aug. 10
Kentuck, div. \$30 per share.	Payable June 10	Payable June 10
Lady Bell, Del Norte Co., June 18, \$15.	July 18—Aug. 5	July 18—Aug. 5
La Blanca, Ures, Mex., June 10, \$2.50.	July 10—July 26	July 10—July 26
Lyon M. & N., El Dorado Co., June 6, \$3.00.	July 5—July 22	July 5—July 22
Lady Franklin, Alpine Co., May 23, \$30.	June 10—July 22	June 10—July 22
Mt Davidson, Storey Co., Nev., May 22, \$1.00.	June 28—July 15	June 28—July 15
Nuestra Señora de Guadalupe, Mex., May 20, \$1.00.	June 20—July 10	June 20—July 10
Seagle & Corcoran, Nev., May 13, \$25.	June 13—July 14	June 13—July 14
Overman, Storey Co., Nev., Annual Meeting July 10.	July 10—July 29	July 10—July 29
Oxford Beta, Esmeralda, Nev., June 10, \$50.	July 10—July 29	July 10—July 29
Phila. Slide, El Dorado Co., May 27, \$25.	June 28—July 15	June 28—July 15
Rattlesnake, Yuba Co., May 22, \$1.00.	June 27—July 15	June 27—July 15
Santa Cruz, Antonio, Mex., June 6, \$50.	July 11—July 26	July 11—July 26
Santa Cruz, Antonio, Mex., June 6, \$50.	July 11—July 26	July 11—July 26
Sophia, Tuolumne Co., June 11, \$3.00.	July 11—July 26	July 11—July 26
St. Louis, Storey Co., Nev., June 1, \$10.	July 22—Aug. 10	July 22—Aug. 10
Seaton, Amador Co., May 23, \$100.	July 8—July 29	July 8—July 29
Succor, Storey Co., Nev., May 28, \$30.	July 1—July 21	July 1—July 21
St. Louis, Lander Co., Nev., May 4, \$5.	June 13—July 14	June 13—July 14
Stockton St. M. div. \$1.	Payable March 14	Payable March 14
Savage, Virginia, Nev., dividend \$100.	Payable May 8	Payable May 8
Santiago, Silver City, dividend.	Payable March 6	Payable March 6
White & Murphy.	Special Meeting July 2	Special Meeting July 2
Whitatch, Lander Co., Nev., June 21, \$15.	Aug. 2—Sept. 26	Aug. 2—Sept. 26
Yellow Jacket, Gold Hill, div. \$75 sh.	Payable June 10	Payable June 10

\*Those marked with an asterisk (\*) are advertised in this journal.

## Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.	FAIRY EVENING, June 28, 1867.
United States 7-10th Bonds, June Issue.	104 1/2
Legal Tender Notes.	72 3/4
California State Bonds, 7s, 1857.	50
San Francisco City Bonds, 8s, 1861.	100
San Francisco City Bonds, 8s, 1862.	89
San Francisco City and County Bonds, 6s, 1858.	75
San Francisco City and County Bonds, 6s, 1859.	80
San Francisco City and County Bonds, 7s, 1862.	81
San Francisco City and County Bonds, 7s, 1863.	80
San Francisco City and County Bonds, 7s, 1864.	80
San Francisco City and County Bonds, 7s, 1865.	80
San Francisco City and County Bonds, 7s, 1866.	80
Sacramento City Bonds.	21
Sacramento County Bonds, 6s.	57
Marysville Bonds, 10s.	75
Stockton City Bonds, 10s.	75
Yuba County Bonds, 10s.	75
Santa Clara County Bonds, 7s.	75
Battle Mountain Bonds, 1860.	70
California Steam Navigation Co.	67 1/2
Spring Valley Water Co.	67 1/2
State Telegraph Co.	29 1/2
MINING STOCKS—WASHOE DISTRICT.	
Alpha.	400
Baltimore American.	480
Belcher.	33
Bullion, G. H.	33
Crown Point.	222 1/2
Confidence.	60
Chollar-Potosi.	60
Dancy.	11 1/2
Excelsior.	10
Empire Mill and Mining Co.	185
Gould & Curry.	190
Hale & Norcross.	200
Imperial.	215
Lady Bryan.	320
Ophir.	320
Overman.	195
Savage.	1600
Yellow Jacket.	17
Golden Rule, California.	17

**NEW INCORPORATIONS.**—Articles of incorporation have recently been filed in the County Clerk's office in this city as follows:  
**AMERICAN M. Co.**—State of Nevada, June 27th. Capital stock, \$580,000; 2,900 shares, \$200 each. Trustees: A. K. P. Harmon, Thos. H. Holt, L. Weller, E. B. Holmes & S. Heydenfeldt. President, Thos. H. Holt; Secretary, David T. Bagley.  
**PIONEER SILK FACTORY.**—San José. Capital stock, \$250,000. President, T. E. Lindenberger; Treasurer, A. Unger; Secretary, A. Martineau; Superintendent, J. Newmann.

**THE KEYSTONE QUARTZ M. Co.** have filed notice of their intention of removing their office from Downieville, Sierra county, to this city.

## THE CENTRAL PARK OF THE PACIFIC.

**Woodward's Gardens, ART GALLERY, MUSEUM, GYMNASIUM, ZOOLOGICAL GARDENS.**

THESE BEAUTIFUL GARDENS ARE VISITED DAILY by hundreds of the pleasure-seeking public, and all agree in pronouncing them the best and only first-class suburban resort on the Pacific Coast. The extensive grounds are covered with the rarest trees and shrubbery, making it a most desirable spot for small parties wishing to enjoy a Pic-Nic. To all departments new attractions are being constantly added. These Gardens are accessible by the Howard, Folsom and Market street Cars. Entrance on Mission and Valencia streets, between Thirtieth and Fourteenth. OPEN EVERY DAY. Admission to all parts, 25 CENTS. Children, under 12 years, half price. 25v14qr

**ELECTION OF OFFICERS.**—IMPERIAL S. M. Co.—Storey Co., Nevada, June 15th. Trustees: Wm. B. Bourn, William Carman, J. E. de la Montagnie, John Sime, John Barton, Wm. H. Sharp, and H. F. Cutter. President, Wm. B. Bourn; Vice President, J. E. de la Montagnie; Secretary, D. A. Jennings; Superintendent, J. D. Greenree. Office, corner California and Sansome sts.

Following, we give the list of present officers of several companies, the report of whose meetings we failed to receive at the time:

**CHOLLAR-POTOSI Co.**—Storey county, Nevada. Trustees: A. K. P. Harmon, C. Hosmer, M. C. Hilley, Lloyd Tavis, Wm. E. Barron, A. C. Peachy, B. F. Sherwood. President, A. K. P. Harmon; Secretary, W. E. Dean; Treasurer, Wm. C. Ralston; Superintendent, Harvey Beckwith. Office, 706 Montgomery street. The annual election of this company takes place on the 8th of July next.

**CONFIDENCE M. Co.**—November 8th, 1866. Trustees: Geo. W. Stewart, S. B. Whipple, Wm. L. Palmer, W. Surryhne, Fred. Collier. President, Geo. W. Stewart; Secretary and Treasurer, R. Wegener; Superintendent, J. B. Dayton. Office, 415 Montgomery street.

**EXCHQUER M. Co.**—Storey county, Nevada. Trustees: S. Heydenfeldt, A. K. P. Harmon, A. P. Crittenden, Thos. Sunderland, A. K. Grim. President, S. Heydenfeldt; Secretary, D. T. Bagley; Superintendent, Joseph Low. Office, 712 Montgomery street.

**GOLD HILL Q. M. & M. Co.**—Storey county, Nevada, January, 1867. Trustees: Ottoviano Gori, P. G. Venard, L. Imhaus, B. Dolheguy, A. Levy. President, Ottoviano Gori; Secretary, R. Wegener; Treasurer, P. G. Venard; Superintendent, H. Huguet.

**HALE AND NORCROSS S. M. Co.**—Storey county, Nevada. Trustees: George S. Mann, M. Morgenstau, C. L. Low, Erwin Davis, Geo. Wallace. President, Geo. S. Mann; Secretary, Joel F. Lightner. Office, corner Washington and Montgomery streets.

THE BANK OF CALIFORNIA took possession of their new and splendid building, at the corner of California and Sansome streets, on Thursday last. This act forms quite an important event in the financial history of our city. It is a noticeable fact that we have, among many similar institutions in this city, a single bank whose paid-up capital amounts to five millions of dollars in gold coin, besides a surplus of \$600,000 of profit, after paying handsome dividends; and that the edifice in which it is located is the finest, most elegant, and most costly of its size in the world. The idea is very naturally suggestive of the sound and healthy financial condition and prospects of the growing commercial metropolis of the Pacific coast. The architects of this building are Messrs. Kenitzer and Farquharson.

**WOODWARD'S GARDENS**, with its rare assortment of birds and animals, its cabinet of minerals, gallery and museum, will afford pleasure and profit to all. Miners and others from the interior should not fail to see the wonders displayed here in such beauty and variety.

**Save Your Teeth.**—Do not have them extracted without first consulting a good Dentist. The loss is irreparable, and, in many instances, unnecessary. DR. BEERS, corner of Pine and Kearny streets, makes a specialty of filling the fangs of dead Teeth, and building up broken crowns with pure gold—thus restoring them to their original usefulness and beauty.

Call and examine the work. Finest quality of artificial work also manufactured. 16v14tf

**FOUNDRIY FOR SALE.**  
 A One-half Interest in the  
**UNION IRON WORKS,**  
 SACRAMENTO,  
 Owned by William R. Williams, is offered for sale on the most favorable terms.

**A Good Bargain**  
 May be had, as the proprietor is going home to Europe. It is seldom that so good an opportunity is offered for a sure and permanent investment. The business of the establishment is exceedingly flourishing, as can be shown. The Shop is of brick, new and well built. The lot is 35 feet front by 163 feet in depth, in a good location for this business, on Front street, between N and O streets.  
 Inquire at the office of the Foundry, or address  
 WILLIAM R. WILLIAMS,  
 26v13tr-16p Sacramento, Cal.

## A Paying Newspaper for Sale.

A one-half interest in one of the best Country Papers in the State, is offered for sale on desirable terms. The Journal is the oldest in the county, is situated at the County Seat, and surrounded by one of the most prosperous and promising Quartz and Gravel Mining Districts in the State. Inquire at the office of the Mining and Scientific Press, or address DEWEY & VAUGHN, Mountain Messenger office, Downieville, Sierra County, Cal. 7v14tf

## MECHANICS' INSTITUTE.

## Resources of California.

THE MECHANICS' INSTITUTE of San Francisco, hereby offer a PREMIUM of ONE THOUSAND (\$1,000) DOLLARS for the best Essay on the "RESOURCES OF CALIFORNIA, AND BEST METHOD OF DEVELOPING THE SAME," under the following conditions: One-half of the premium in cash on the certified award of the Committee of Judges, and the balance from the first proceeds of sales of the successful work, which is to belong to, and will be published by, the Institute.

The Essays are to be handed in to the Librarian of the Institute on or before the FIRST DAY OF JUNE, 1868, and the award will be made by the Judges at the opening of the Industrial Exhibition, which is to be held in August or September following. The Essay should be divided into three great heads, viz: Mineral, Agricultural and Industrial Resources, with proper subdivisions of each subject. It should be sufficient in quantity to form a duodecimo (12mo) volume of from 250 to 300 pages long primer type, solid.

Writers will sign their articles in cypher, and send their names and address in sealed envelopes, which will be kept in a secure place by the Institute, and only be opened when the award is made. The manuscripts of unsuccessful writers will be returned to them without publicity.

The Committee of Judges have the right to reject all Essays in case they do not consider them worthy of publication or the premium. No further instructions than are contained in this advertisement will be given to this Committee, nor will they be subjected to any advice from the officers or members of the Institute in regard to their proposed action. All manuscript submitted must be in clear, legible writing, so as to admit of easy reading.

The following named gentlemen, who have been selected for their well known ability, public spirit and integrity of purpose, will compose the Committee of Judges: Hon. Fred'k F. Low, Maj. Gen. H. W. Halleck, U. S. A., Prof. J. D. Whitney, S. A., James Oils, Prof. W. B. Ewer, Wm. Governor Morris, B. N. Bugbey.

By order of the Board of Directors. D. E. HAYES, Secretary. San Francisco, June 12, 1867. 2v14-2m

## W. T. GARRATT, City BRASS AND BELL FOUNDER

Cor. Mission and Fremont sts., SAN FRANCISCO.  
 Manufacturer of Brass, Zinc, and Anti-Friction or Babbet Metal Castings:  
 CHURCH AND STEAMBOAT BELLS,  
 TANKS AND HAND BELLS AND GONGS,  
 FIRE ENGINES, FORCE AND LIFT PUMPS,  
 Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles, HYDRAULIC PIPES AND NOZZLES.  
 For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."  
 Highest Market price paid for OLD BELLS, COPPER AND BRASS. 6tf

## E. POWER, WOOD CARVER

—AND—  
 Composition Ornament Manufacturer.  
 Designing, Modeling and Patterns FOR CASTING.

INTERIOR DECORATIONS OF ALL DESCRIPTIONS, In Wood, Composition and Metal.  
 Nos. 311 and 313 Market street, San Francisco. 25v14-qy

ISAAC R. NATIS, HENRY COWELL, DAVIS & COWELL, DEALERS IN  
 Santa Cruz Lime, Cement, PLASTER, HAIR, LATH AND LATH NAILS.  
 Marble Dust, Fire-Bricks, Fire-Clay, Fire Tiles of all sizes. Cor. Front and Washington Streets, San Francisco. 25v14-tf

## HAYWARD, COLEMAN &amp; CO., IMPORTERS AND REFINERS

—OF—  
 Illuminating, Lubricating, PAINT OILS!

—CONSISTING OF  
 KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS', NEATFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—  
 SPIRITS OF TURPENTINE & ALCOHOL.

Notz.—We would specially call the attention of Mill owners and Engineers to our superior PARAFFINE OIL, which we manufacture from the California Petroleum. This Oil will not gum. Machinery thoroughly cleaned and lubricated with it will not heat, and after remaining at rest, can be started without cleaning off.  
 A sample can of our Paraffine Oil will be forwarded on application to us, as we desire a fair and impartial trial.

**Lamps and Lamp Stock!**  
 An elegant and complete assortment on hand. 5v13-3m19 414 Front street, San Francisco.



## Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

Without grumbling, we will say outright that some of our exchanges reach us several days overdue, and frequently after we have seen extracts from them in the daily press of this city. Full credit is given in our mining summary to every interior journal. The papers are wanted as early in the week as possible. Put us at the top of the file, gentlemen, and if the P. M.'s neglect their duty, woe be unto them hereafter.

## CALIFORNIA.

## Alpine County.

*Miner*, June 22: The ore-house of the Tarshish mine, lately completed, is 40 feet long, 20 feet wide, and 30 feet high.

The mine is now being chambered out at the point where the rich body of ore was found, and drifts run north and south on the vein. In a few days the tunnel will be pushed ahead in the face.

## Amador County.

*Ledger*, June 22d: The Oncida mill is again in full blast—the new engine just up working admirably; and the company expect to be able in future to obtain greater yields than ever before from this mine.

Rich quartz has lately been struck near the Butte. We are not at liberty to give particulars.

The quartz mines of this county were never in a more prosperous condition than at present; new discoveries are being made weekly.

## Colusa County.

*Sun*, June 22d: The Lyon Copper Smelting Co. have made a failure in their works. Their furnace would smelt the copper, but they could not succeed in running it out. The ore is rich enough to pay, and in sufficient quantities. The company have levied an assessment of one dollar per share, for the purpose of purchasing and erecting a Haskell furnace.

## Nevada County.

*Transcript*, June 22d: The snow at Fall Creek is all gone, and miners are resuming work on their tunnels. At Red Dog and You Bet about 300 men are at work.

Considerable prospecting for quartz is being done in the vicinity of the Anthony House, Pleasant Valley. Last week another new and promising ledge was discovered and located in this neighborhood. A shaft is to be sunk immediately for the purpose of prospecting.

The mine owned by Cozzens & Garber, on Missouri Cañon, between You Bet and Red Dog, has been recently sold to Neece & West, experienced cement miners, who will proceed immediately to work the mine.

June 23d: The Golden Gate Co., at San Juan, cleaned up on Thursday last, and took out \$7,000. All the companies on San Juan Hill are doing first rate.

June 25th: Ten or twelve companies are at work on Deer Creek, where the blue gravel channel crosses near the Cascades. The North Star Company has struck first rate gravel. Last fall some gravel was taken out that paid from \$10 to \$30 to the pan.

June 26th: From an assay of six pounds of rock from the Grizzly ledge, at Devil's Cañon, made by J. J. Ott, \$105 in gold was obtained. These sulphurets were taken from the blanket washings.

*Gazette*, June 20th: At Blue Tent the gravel channel is over 2,000 yards in width, and of unknown depth. The banks of the Enterprise Co.'s claims are 260 feet high, and the bed rock is known to be a considerable distance below them. The Killam Co., of San Francisco, employs five men and 120 inches of water. The company owns 1,800 feet of ground front, and 5,000 feet back.

A company from Timbuctoo has recently purchased the Hawkeye and Washington claims, and intends opening them this summer.

*National*, June 19th: The Wiseonsin Co. are now working for the third level, and have struck a rich ledge varying from one to two feet in width. About \$400 worth of rock has been taken out, after putting in a blast. A great deal more of the same sort is in sight, and will be brought to the surface as soon as the workmen can get at it. The company owns about 5,100 feet.

June 22d: The Cambridge mine at Union Hill, at the depth of 230 feet, struck a ledge some 2½ feet in width. The rock shows gold very plainly.

Grass Valley Union, June 15th: At Eureka South, the Jim and Black & Young quartz mills are running with good results, and two arastras are also engaged in crushing rock. The Commercial, a San Fran-

cisco company, has made arrangements to construct a quartz mill on the company's mine, the machinery of which is now en route for Eureka South. The Birchville Co.'s mine is looking splendidly, and at a depth of fifty feet a strong vein four feet in width is exposed.

The Birchville Co. design erecting a mill soon on their mine, which is at the South Fork, Eureka district.

June 20th: A fine looking vein, showing plenty of free gold and rich sulphurets, was recently struck in the Ione.

*Excelsior*.—Meadow Lake *Sun*, June 22d: The Kentucky Co. have commenced work on their mine. They are running in an open to the ledge, and as soon as they have reached it they will begin to sink upon it. It is the intention of the company to erect a mill on their ledge before the present summer has passed away.

Many of the claims of this district are preparing for work. In the course of the next thirty days 500 men will be employed on our mines.

Some splendid looking rock was taken from the Pine Tree Co.'s claim, on the Live Oak ledge. The more this ledge is prospected, the better it promises. Many good miners think it one of the richest leads in Excelsior.

The Comet Co. has commenced work on the Shooting Star ledge. Returns from two different assay offices of ore from this ledge give from \$150 to \$680 per ton, gold. The claim is also rich in copper.

Some fine ore from the California Co.'s claim were shown a few days since, containing a considerable quantity of free gold mingled with sulphurets.

The mill of the Golden Eagle Co. is now running, and they are crushing some very fine looking rock, but we cannot with propriety make any estimate of the results.

## Placer County.

*Dutch Flat Enquirer*, June 22d: Since the result of the crushing by the mill of the King Brothers has become known, quite a number of strangers have been in town, doubtless with the intention of becoming interested in the many cement claims in this place.

*Courier*, June 21st: Rich rock from the Shepherd mine is as regular as the mails. The pieces taken out last Saturday weighed in the aggregate ten pounds, some pieces containing over a pound of gold. Mr. Shepherd has thus far worked 125 tons of rock, and has, from the proceeds alone, erected a mill and thoroughly opened the mine.

## Plumas County.

The Plumas correspondent to the *Marysville Appeal*, of June 25th, writes from Nelson Point: The mines are fluctuating—some improving; others having failed. Beesy, near Argentine, has been making about \$6 per day. Cook & Co., Bonner & Lee, Capt. Hull & Co. are now scarcely making expenses. Squire, Stevens & Co. have got through ground-slueing, and expect to do well. What washing up they have done has paid them \$6 per day. Frank Kane, on the adjoining claim, is still ground slueing. Richards & White, on Sawmill Point, have been averaging \$6 per day. Messrs. Jackson, Jolly & Mitchell, near the Willow Ranch, are running their ravine claim night and day. It prospects better than it ever did before. A little dirt, taken from the ground slueing, and panned out on a shovel, produced \$1; part of a pan full, scooped up from the water at the head of a displaced riffle, \$35. They expect to clean up \$25 or \$30 per day to the man.

Last week the Eagle Co., Sawpit Flat, cleaned up 535 ozs. They think there is yet between \$2,000 and \$3,000 in the ground slueing.

## San Bernardino County.

*Guardian*, June 22d: The steam pump works in Holeomb Valley work admirably. A flume has been constructed 275 yards long, and a shaft sunk in a flat which heretofore could not be penetrated. E. G. Moore, at the Green lode, is working four arastras. The ore at the bottom of the shaft works \$50 per ton.

Gold-bearing quartz is said to have been discovered in the valley of San Jacinto.

At Prescott, the Big Bug Co. has erected furnaces for roasting, and will commence crushing this week.

The Umpqua mill will commence work as soon as they get their new machinery up.

In addition to the mills, there is a number of arastras in the various mining camps, which have been doing well.

## Sierra County.

*Yreka Union*, June 22d: At Mugginsville, Hollenback & Co. washed up last week \$2,400 after a two weeks' run. The Oro Fino claims are paying well. Hice & Co. washed up about \$3,000 last week. Anderson, Clark & Co. are opening claims in the

flat below the celebrated Wright claims, that have paid so well for the past five years.

## Yuba County.

*Appeal*, June 20th: The Pennsylvania mine, at Brown's Valley, is crushing very fine rock. It will not be long before the company will declare its first dividend.

## ARIZONA.

*Arizona Miner*, June 1st: The Moss mill has lately been crushing ore from the Moss mine with highly satisfactory results. Some 300 tons of ore are now in sight. W. H. Hardy is getting good ore from his shaft on the Parsons. The vein improves as it goes down.

At Turkey Creek 24 men are employed, running tunnels on the Bully Bueno and Yahoo lodes. On the former the tunnels are respectively 75 and 175 feet in length. The former will, at twice its present length, strike the lode at the depth of 300 feet. The tunnel on the Yahoo is now 75 feet in length, and will be extended to 150 feet. The lodes appear large, and the ore of the Bully Bueno is evidently turning to silver. The Vulture mill is working successfully.

## COLORADO.

*Georgetown Miner*, May 30th: Very fine ore has been struck in the new Boston lode. Messrs. Cree and Pierson let a contract on Monday last for sinking on a lode in Columbia Mountain, situated near the Nuckolls lode. The vein at the surface shows a fine white crevice, with good indications of rich ores. Several parties are taking steps to secure United States titles.

Mr. J. Watson is about to erect works in two places in the district, introducing in each the California process now so successful in the hands of Messrs. Reese, Krause & Brueker, of Black Hawk. It is also on dit that Mr. Watson is about to build for himself a splendid family domicile in Georgetown, he having purchased lots for that purpose last week. The first button from Johnson's furnace was taken out on Monday last. It weighed thirteen pounds, and was cupelled from lead run out by Mr. Stowell's furnace last year. The button is worth \$325. Very promising results are obtained from the Watertown lode. Many discoveries of rich silver lodes are being made daily in the vicinity of Downieville, and near the head of Fall River. A specimen of ore weighing eighty grains, taken from the Bethany lode, and assayed by Mr. Burlingame, returned a yield of silver over fifty per cent. The Bethany is opening up very finely, and bids fair to prove one of the very best lodes in this district. Dr. Johnson's second button of silver will weigh not less than two hundred pounds. The Georgetown Tunneling Company have commenced work, and already have struck some good indications within ten feet of the mouth of the tunnel. Mr. Guittens, the contractor, is confident that within three months the amount of rich ore that can be taken out at the tunnel will put a stop to all assessments and declare dividends. C. A. Martin, Esq., is putting up a furnace in Col. Wm. H. Hale's mill, using the same style of furnace as that of the firm of Krause, Reese & Brueker, for the purpose of chloridizing silver ores, now in operation at Black Hawk. After roasting by the method named, the metal is amalgamated by the old process of the Freiberg barrels. The furnace will run on custom ores. The capacity of the mill is four tons in twenty-four hours. They will be ready for work in about two weeks.

## IDAHO.

*Owyhee Avalanche*, June 15th: A new ledge has been discovered near Idaho City, which is believed to be a second Poorman. It has been christened the Potosi. The ledge is one foot wide, containing free gold and native silver, easily cut with a knife, and the whole mixed with black sulphurets. The ledge has the appearance of a true vein.

The Poorman Extension Co. is enlarging operations. Besides sinking a shaft, a tunnel has been commenced at the head of Webfoot Gulch, which is to be run 70 ft. south, to connect with a shaft near the south line. The mill of the Owyhee M. Co. is undergoing repairs, and is expected to begin operations in a few days.

The Minear mill is undergoing repairs. A lot of Whiskey Gulch ore has been roasted for crushing in the mill.

Black, in Flint Dist., has got his mill to running, and is turning out bullion from the Rising Star mine. Some rich discoveries of ledges are reported, and old ones developing richer. The Leviathan is yielding quartz beautifully tinted with ruby silver. Chas. Liebenau has his smelting and concentrating works nearly ready for experiments—the immediate design and capacity being only intended for practical experiments, the first of which will be made with ore from the Leviathan. The ore will first be crushed in Black's mill and afterwards concentrated.

June 22d: The following is the result of the Poorman mine, worked in the different mills, from July 19th to Nov. 1st, 1866:

Name of Mill.	Tons Ore.	Ozs. Bullion.	Value.
N. Y. & Owyhee	380	17,460 17	\$255,683 59
N. Y. & Oro Fino	771½	126,763 91	203,686 71
Ainsworth	362½	33,178 82	62,220 81
Jackson (Webfoot)	569½	7,223 29	25,200 58
Total	2,382½	305,215 89	\$546,691 59

Average yield, \$229.45 per ton, and the entire cost for mining, milling, etc., \$66.07 per ton.

The Morning Star mill is at work on Oro Fino rock.

*World*, June 15th: The Bummer Hill claims, of Sam. Sniveley & Co., near Centerville, are doing well. It seems that their gold product is exhaustless. Water is furnished by the Ditch Co., from Grimes' Creek, above Pioneer City.

The first clean up in the claim of B. F. Channell, Bahoon Gulch, yielded \$1,240. Another partial clean up, after a three days run, yielded over \$800.

A clean up of the claims of Casey, White & Co., and the Highland & Murphy claim, on Bonner Hill, yielded very rich. Cannally & Co. got 150 ozs. from a six days' run, and Wash. Underwood's claim has been paying handsomely.

A clean up of two cuts in the claims of Noble, Sanders, & Co. on Buena Vista Bar, after a week's run, gave \$5,700.

Lemhi is about "played out," the excitement has subsided, and the great question now is how to get away. A letter from Blackfoot City to the *World*, says that there are only three good gulches which have claims on them, some paying from \$5 to \$15 to the hand. But they are all on the sell, not a very promising sign.

Same of 19th says the third clean up of the season was made at the quartz mill of the Elkhorn Co., last Saturday, and from 70 tons of ore the gold produced was 410 ozs. Many of the Basinites who went or started to Lemhi, are returning to Boise.

*Lewiston Journal*, June 1st: Times at Warren's Diggings are good. Bemiss, Grayham & Noon, Hammond & Co., and Wm. George are all pipping. The creek claimants are mostly all ground slueing.

A letter from "49" Creek says that rich diggings exist there, sufficient for the employment of 1,500 miners.

The Boise *Statesman* says that an astonishingly rich gold bearing ledge has been struck on War Eagle Mountain; thought to be equal to the Poorman. The finders have been offered \$20,000 for their chance. The *Bullion* says that a chunk of gold worth \$3,000 was taken from the ledge.

## MONTANA.

*Post*, June 8th: Montana Bar, in Confederate Gulch, contains but seven claims, each 200 by 250 ft., from which, in the space of three months after discovery, over \$1,000,000 in dust was taken. Now nothing but the bare, cleanly scraped, rough slate bed-rock marks the spot. Boulder ditch, 4½ miles long, is five ft. wide by 2½ deep, capable of accommodating 2,000 in. (miners' measure). An iron pipe, 22 in. in diameter, will conduct the water from one hill to the opposite one 400 ft. high. Two more ditches have been surveyed, one seven miles long, from Duck Creek, east of Diamond, is commenced. The other, 25 miles long, will take its water from Deep Creek, a large tributary of the Missouri.

The Gaston & Simpson Co's mill, in New York Dist., will soon start on ore from Heald & Toole's Gold Mountain lode, and should the yield be as anticipated, will probably purchase the ledge.

*Helena Gazette*, June 8th: John Hannon, J. Smith, M. Welch, P. Gillespie and J. Cumeske, of Diamond City, are now actively engaged in bringing a large ditch, for hydraulic mining on El Dorado Bar, from Duck Creek. This ditch will carry 2,000 in. of water, and will make sad havoc with the bar it is intended to wash. Great results are expected from this work. It will be completed by the 1st of July.

Truitt, Dahler & Co. have finished the Ten-Mile ditch, which carries 3,000 ft. of water. The flume across Grizzly Gulch, is a grand specimen of workmanship. The bents that support the flume, are hewn out of tall pine trees, and one put on top of another. The canal will be of incalculable benefit to Helena.

The C. P. Freeman lode in Jefferson county, a newly discovered ledge, is very rich. The crevice at the surface is 3½ ft. thick; and at the depth of 14 ft., is five ft. thick. A contract has been entered into to sink a shaft 50 ft. deep immediately.

Mr. Hanser has on the way five large furnaces, each of a capacity greater than the one at Argenta, and two quartz mills for crushing ores. Two of these furnaces have already been located. For the three remaining furnaces, and for the mills, no lotious have yet been made, but it is the design to purchase property or make arrange-



ments with quartz owners for working their lodes.

#### Black Rock. NEVADA.

The *Reveille*, June 20th, says that it is all folly to regard the ores of this district as intractable. There are amalgamators in Austin that will get the metal out, if there is any in the rock. The amount of ore is immenso, and could some method be devised to work it successfully, it would yield fortunes to hundreds of miners. Some of the ore has been sent to Freiberg for assay, no returns having been received as yet. Mr. Jno. A. Boalt, assayer, is now in the district making examinations, and will report the fruits of his investigations soon.

#### Humboldt.

Unionville *Register*, June 15th: Mr. Torrey has started up the Etna furnaces.

#### Pahrump.

Silver Bend *Reporter*, June 22d: The Pahrump Valley Co. are erecting a 10-stamp mill at Hiko, below Raymond's five-stamp mill. This latter was built on the soft alluvium of the valley and the stamps soon drove the battery blocks out of sight into the mud. Hereafter, the mills will be placed a few yards west where table land is composed of hard, gravelly concrete furnishes an enduring foundation. The machinery of the Crescent mill is nearly ready to run and will be in motion shortly. It has a battery of five stamps.

#### Reese River.

*Reveille*, June 17th: The amount of bullion produced and assayed at the Keystone mill during the week ending June 15th, was 15,510 ounces.

June 18th: A lot of crude bullion from the Rutland mill, melted at Currie's establishment, assayed .927 fine. This result shows that within 75 to 80 per cent. of the pulp can be turned out by this mill without roasting.

June 20th: Specimens of ore mined at Austin, on exhibition at the International Hotel, Virginia, have produced a sensation, from their hearty and rich character. The finest specimen was from the Diana, and would assay far into the thousands.

Gold Hill *News*, June 20th: Ex-Mayor Piper just from Pine Grove, reports good prospects.

The Belmont correspondent of the *Trepass*, June 11th, says: The mines are looking first rate—not only on the Highbridge, and in the immediate vicinity, but from all quarters. Rock of great richness is brought into town daily. Work is being pushed briskly on the El Dorado, Oneida, Independence and Arizona. Some very fine rock has been produced from the latter. From a conversation with McMurray, who is just in from Manhattan, I learn that everything is progressing finely in that district. Lack of mills is our only failing at present. The grading of the Combination Co's mill will be finished this week, and I understand the Silver Bend Mining Co. commence operations shortly on their mill. A new excitement, 60 miles from Indian Springs, has been sprung, and rumors of the discovery of fabulously rich rock are rife in town.

June 22d: The amount of bullion produced and assayed at the Keystone mill for the week ending June 22d, is 15,450 ozs.

*Enterprise*, June 19th: Our eastern districts continue to send in samples of extraordinary richness. The orders for machinery coming from a number of these new mining camps are excellent evidence of the worth of the mines, for the men engaged in their development are not men easily deceived in regard to the value of either gold or silver ores.

Silver Bend *Reporter*, June 22d: The Righty mill in San Antonio Dist., is crushing about 1½ tons of Liberty ore, daily, with four stamps, which yields an average of \$300 per ton. The ore is taken by the mill company at the mine and reduced at \$75 per ton. There is no scarcity of ore of this quality at the Liberty.

Two and a half miles east of the Montezuma Spring, is a large ledge called the Ruby, which crops holdly and can be followed without difficulty for a mile and a half. It is about 12 ft. in thickness, and is extremely rich—the predominating mineral being copper.

Col. Catherwood, of the New York and Silver Peak Co., is in Palmetto Dist., making arrangements to erect a mill.

Work upon the mill of the La Plata Co., at Park Cañon, Smoky Valley, is progressing rapidly. It is thought that the machinery will be ready for work some time during the month of July.

A ton of ore from the Jerusalem ledge, Empire Dist., recently worked at an Austin mill yielded \$467, pulp assay.

For the past six weeks the Murphy mill at Ophir Cañon has been run at only half its capacity, yet the average product of bullion has been about \$1,000 per day.

#### Washoe.

[In the Stock Circular, in another portion in this paper, will be found late mining news from this district.]

*Trepass*, June 11th: In the Yellow Jacket the connection between the winze and lower level has been perfected. The body of ore is larger than anticipated, and of a better quality than that above.

*Enterprise*, June 21st: The price of quicksilver has been reduced from 70 to 65 ets. per pound, at the agency of the Bank of California, in Virginia City.

New developments of rich ore has been struck in the Overman mine.

June 22d: During the past week, Wells, Fargo & Co. shipped 13,872 lbs. of bullion, valued at \$307,607.77.

Quite an excitement has prevailed during the last few days, about the superintendency of the Overman mine, McCulloch being removed, and Capt. Sam Curtis appointed in his stead.

Under date of June 12th, the Virginia correspondent of the *Bulletin* of this city, writes that the Gould & Curry mill will remain closed 30 days. There is a tremendous amount of repairing and cleaning up necessary, but this is not the sole cause of the stoppage. The supply of ore has been dropping off of late, until there was not enough to keep the entire 80 stamps in operation. The mill will be put in splendid order during the suspension, and 2,000 tons of ore will have accumulated.

#### OREGON.

Dalles *Mountaineer*, June 8th: About 250 miners are at work in the Big Bend mines on the upper Columbia river, and are making from \$5 to \$50 per day to the man, and the prospects are, from present indications, that some rich strikes will be made before the close of the summer.

Jacksonville *Sentinel*, June 22d: Stephen Gale found a diamond, while panning out a few days since. It has been examined in the dark, and pronounced a genuine brilliant.

Jacksonville *Press*, June 18th: The news from Wines Camp on Jump-Off-Jo, is in every respect gratifying. All the companies, thus far, who have cleaned up, have made good wages; notwithstanding the extra labor and embarrassments encountered in opening the claims. Mr. Wines and a partner, after a run of one day and a half, cleaned up \$80; their claim averages \$12 a day to the hand. Many of the other claims when placed in as good condition for working will, no doubt, pay fully as well.

*Record*, June 18th: A limestone quarry has been discovered by Frank Cooper, at the mouth of Beaver Creek, on Butte Creek, in Clackamas county, 18 miles from the Willamette river.

Cooper's coal mine is opening to good advantage, and at the depth of 65 ft. shows an improved quality of coal from that before produced. He has 100 tons of coal out, 25 of which he says is of the very best quality.

The *Oregonian* says: A recent discovery of coal has been made at the mouth of the Columbia, just back of Baker's Bay, and inside of the bar. It has been definitely settled that these coal mines are accessible, and therefore invaluable not only for domestic use, but for our great ocean steamers, which heretofore have been to extraordinary expense in procuring their supply of this article of fuel. Mr. Mercer has been appointed agent by the owners, who will, as soon as practical hands can be procured, proceed to open the mines, and render them of service.

#### DEPRECIATION IN THE VALUE OF COAL.

In an article, a few weeks since, we gave some particulars with regard to the depreciation in the value of coals from their exposure to atmospheric influences between the time of their being raised from the mine and their actual use by the consumer. In looking over a late report of the Peninsular and Oriental Steam Navigation Co., we notice the following paragraphs, which will be read with much interest in that connection:

"Unfortunately, the coals suffer greatly in transmission, and notwithstanding all the expenses incurred for their protection from the effects of climate, they undergo a deterioration of fully twenty per cent. from their original quality before they are burned. This fact was submitted to the committee of 1866 by a most competent witness, Mr. Samade, M. P., in the following words, when comparing European with Indian voyages: 'It is a well known thing that coal deteriorates very much indeed in hot climates. It is very difficult to keep it so useful and so good as in Europe, and I have made an allowance that we must require one-fourth more coal to do the same quantity of work.'"

#### Facts About Patent Matters.

##### NUMBER THREE.

##### WHAT MAY BE PATENTED, ETC.

In the first place, an abstract theory cannot be the subject of a patent; neither can any of the natural laws nor the forces of nature. It must be something that *man* has invented and reduced to practice, either by making a model or working machine, or at least have made drawings of it plainly showing the device and its mode of operation. It must be something not known or used by others before, either at home or abroad; or which at least, must not have been described in any foreign publication for a longer time than six months prior to its invention here. Many persons suppose that it is only necessary that the thing should be new at home; but this is not so, for the law is explicit on the subject; and at the Patent office, the examiners search the records of foreign patents, and the scientific publications of all nations, with which the library of the office is provided in all examinations, whenever there is any reason to suppose that anything has been done abroad in the same line, and applications are almost daily rejected on English, French, or German references. A patent may be granted for "any new and useful art, machine, manufacture, composition of matter," and for *designs* also—the latter being any figure or design attached to, stamped, or otherwise fastened upon some other article for the purpose of ornamenting it—such as figures in carpets, calicoes, oil-cloths, stove plates; also busts, hass-reliefs, etc. Improvements upon any article that could be the subject of a patent, may also be patented—no matter whether the thing improved has been patented or not. But if it be an improvement upon some other machine or device, instead of an entire new invention, then it must be so described and claimed in the application for a patent. In case of an improvement upon an article already patented, the inventor of the improvement cannot use the original article without the consent of the patentee, nor can the original patentee use the improvement without the consent of the inventor of the improvement. It is sometimes difficult to determine what is an improvement, but generally the action of the office is very liberal in determining this point. It must be something more than a mere modification of another thing. Some of the parts must be different from the same parts in other similar machines, or must be differently combined, constructed, or arranged. To constitute an improvement, it must produce new or better results, or produce them in a cheaper, simpler, or better manner. New results may be produced by the use of old and well known means, or old results may be produced by new means. The object sought to be accomplished cannot be patented, but the means for accomplishing it can be. For instance, a patent will not be granted for the admeasurement of time, but will be for the machinery or device by which it is measured. So, too, a patent will not be granted for the expansive operations of steam, but will be for the machinery or means by which its operations are carried on. A principle cannot be patented—only the means by which it is applied; and no matter how many different means of applying it may be invented, each is entitled to a patent. A person may, however, claim producing a particular result without limiting or confining himself to any particular mechanical device for accomplishing it, if he be the first who has ever done it, and shows at least one way of doing it. Such cases are, however, rare.

A combination of parts, or of the inventions of other parties, may also be patented. For instance, A invents and patents a cylinder for a steam engine; B does the same as to a valve, governor, or any other portion of the engine; C may then get a patent on the combination of A's and B's improvements in one machine, provided they operate together. In this case, his patent will cover only the combination, and will not give him any right to make or use either A's or B's invention, without first having the right of them; and so on of any number of parties. It is in this way—by this combination or aggregation of improvements in one machine that our most valuable machines have arrived at their present state of perfection. As samples of this, take the steam engine, the reaper, the threshing, and the sewing machine. In fact, it is often the case that the improvements are of as great or even greater value than the original invention. Howe's original patent on the sewing machine was of very little value, practically, until others invented improved machinery for operating it.

The same thing cannot be patented for one purpose, and then again for another. For instance, a fanning mill may not be patented for cleaning wheat, and then patented

again for cleaning beans. The mill itself is the subject of the patent, and it matters not to what use it is afterwards put.

Again: but one machine or device can be included in one patent, unless they are connected in their operation, and are used for one and the same purpose. For instance, a machine for sowing grain, and another for raking hay, cannot both be included in one patent, even though some parts of the same machine are used in both, because sowing grain and raking hay are two entirely distinct operations, requiring very different machines. So, too, a machine for cutting threads upon screws, and another for cutting the slots in the screw-head, cannot be included in one patent, although both are used to perfect the one article, because, if made separately, they are different machines, each performing its functions independent of the other. At the same time, a machine which includes devices for performing both these operations, could be covered by a single patent, if it constituted but one machine, and the parts were connected in their operation. This is illustrated by the nail machine, which both ends and heads the nail, by successive steps.

Thus it will be seen that almost everything that can be mentioned, or that can be used for any purpose whatever, may be patented.

Although the law uses the term "useful," a very slight degree of utility will suffice to ensure a patent. In fact, the courts have decided that the term useful is used in contradistinction to injurious; and hence that everything which is not positively injurious, is useful, in the sense meant by the law. In examining an application for a patent, the office does not undertake to decide whether the device is better than all preceding ones. The only questions are, is it new?—is it novel?—does it operate differently from others? If so, it is patentable. From this, it will be seen that there is no limit to the number of inventions yet to be made, and that those who talk about any branch of invention being exhausted, have but a limited idea of the subject. Every new invention that is made opens the way for countless others. Let a person attempt to determine by figures, the number of positions or changes that can be produced with the letters of the alphabet, and then consider that the alphabet of inventions is being constantly augmented by the addition of new cases, and he will begin to realize the impossibility of conceiving of the number of changes and combinations yet to be invented. It is infinite! I have sometimes thought that the best way to get an idea of what is yet to be done, is by endeavoring to realize what has already been done by man. In order to do that, let one simply imagine Adam, as at first created, *without a single manufactured article in the world!* Then take the first object upon which the eye rests—a pail for instance—and endeavor to think of the numberless processes, inventions and discoveries that had to be made, before that simple article could be produced. Think of the mines to be discovered—the ore mined and smelted—the forge to be built—the chemical process discovered and applied—besides the various other acts to be done before even the ax could be made that cut the tree from which the timber for the pail was obtained. Then let him follow in his imagination, that log to the mill—its transformation there into lumber—its conveyance perhaps thousands of miles—the varied and numerous processes through which it passes in the factory before it is ready to set up—then also of the hoops and bail, and the process and machinery necessary for their manufacture—let him do all this with reference to that simple article, a pail—and then let him endeavor to think of all the things there are made by the hand and skill of man in the world, and he will begin to have a very faint notion of what has been done in the way of invention and improvement. And when in addition to all this, he bears in mind the fact that every invention made, opens the way to countless others—that in fact, our progress in this line is constantly accelerating, he may then begin to realize the utter impossibility of imagining, much less limiting, the inventions or improvements of the future. Let no one, therefore, imagine that inventions are at an end—far from it. The discovery of coal oil alone has given rise to several thousand inventions. And then, too, consider for a moment, the numberless uses to which its products are applied—who can enumerate them?—and yet each day but adds to the number. In contemplating the future progress of our race in the department of invention, one becomes utterly lost. Even now, he is a smart man, who, in a lifetime, can even learn what has been already done! What, then, will be our condition a thousand years hence? and remember the Russian government has existed a thousand years already. Then at least,

"One science only, will one genius fit,  
So vast is art, so narrow human wit."



## Mining and Scientific Press.

W. B. EWER,.....SENIOR EDITOR.

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Writers should be cautious about addressing correspondence relating to the business or interests of a firm to an individual member thereof, whose absence at the time might cause delay.

## Canvassing Agents.

Mr. A. C. Knox, is our city soliciting and collecting Agent, and all subscriptions, or other favors extended to him, will be duly acknowledged at this office. Jan. 11, 1866.  
Mr. L. W. Felton, is an authorized agent for this paper at Portland, Oregon. Dec. 1, 1866.

Mr. S. D. Whitaker is our duly authorized traveling agent. June, 1867.

Mr. C. A. Wetmore is an authorized agent for this paper.  
Wm. A. Ferris is a duly authorized Traveling Agent of the Mining and Scientific Press. June 24th, 1867.

## San Francisco:

Saturday Morning, June 29, 1867.

## Notices to Correspondents.

H. C. M., Austin, Nevada.—Some information with regard to the advantages of the use of nitro-glycerine will be found in our last week's issue. The article used, as there referred to, is made in the following manner: Thirty-five pounds of a mixture of two parts of sulphuric acid and one part of nitric acid are placed in a stoneware jar—the jar being immersed in snow or ice-cold water; the acids so mixed are allowed to remain until they have fallen to 32° F. When this temperature has been reached, 3½ pounds of pure glycerine are poured into the jar, its contents being slowly stirred the while. This addition will raise the temperature from 32° to 60°; and if the stirring is not now stopped, the heat will still go on increasing to the danger of an explosion. After ten or fifteen minutes' rest, the temperature goes back to 32°, when 3½ pounds more of the glycerine may be added, in the same manner and with like care. Another ten or fifteen minutes' rest is now given, when a tub containing ice-cold water to about seven times the quantity of acid and glycerine, is prepared, and the water placed in a rapid whirl by means of a broad stick or paddle. When this motion has been well established, the compound is slowly poured from the jar around the edge of the whirling water. The glycerine, being insoluble and heavier than water, soon collects at the bottom of the tub, while the acids, with the water and the excess over that which passes into chemical combination with the glycerine, is poured out—the glycerine is thus washed clean of the acids with which it has been mingled. The chemical action which has now taken place is a separation, from the glycerine, of three equivalents of hydrogen, which are replaced by a like number of equivalents of nitric acid. The manufacture is now complete, and the article is placed in cartridges of proper size and prepared with any suitable percussive apparatus for firing the same. The preparation must be kept constantly at a very low temperature. The practice on the railroad is to place the cartridges, as fast as made, upon the snow or ice, where they soon freeze. Nitro-glycerine freezes eight degrees above the freezing point of water, or 40° F. They can be used as readily when frozen as when fluid. It is possible that some portion of the above detail may not be strictly correct. Of course no one who is not a thorough practical chemist should attempt to experiment with this dangerous compound until they have witnessed its manipulation and manufacture by an expert. We presume that the gentlemen having charge of its manufacture at the railroad tunnel would give our correspondent all necessary instructions for its manufacture, and that all desired preliminary information could be obtained by addressing a letter to Mr. Stanton, the Superintendent of that work. A detailed and illustrated account of the mode of using nitro-glycerine will be found in our issue of December 23, 1865.

POTTER, ANTIOCH.—Unless the difficulty arises from the dearth of fuel, we think ordinary varieties of porcelain might economically be made in this State. Salvatet and Ebelman found that in the manufacture, the chief Chinese varieties corresponded with the chief principal European kinds, so far as the raw materials employed are concerned.

## Interesting Chemical Researches.

We alluded, some three or four months since, to the fact that the distinguished French chemists, Daubrée and Bertholet, have been for some time engaged in an interesting series of chemical experiments and investigations, the object of which is to show that the combinations of carbon and hydrogen, known to chemists as hydro-carbons, may be effected without the intervention of either animal or vegetable life—that is, in a purely mineral way. In the course of these experiments, the gentlemen named actually succeeded in producing acetylene ( $C^4H^2$ ) by the direct union of carbon and hydrogen derived from purely mineral substances; and furthermore showed that this radical (acetylene), heated to a temperature near that at which glass melts, and under certain conditions, is gradually converted into a series of polymeric bodies identical with certain well known hydro-carbons. Thus, triacetylene is benzol ( $C^{12}H^6$ ); tetracetylene is styrol ( $C^{16}H^4$ ); pentacetylene is cymol ( $C^{20}H^{10}$ ). The highest product yet obtained in this series is retene ( $C^{16}H^{18}$ ).

Upon the result of their experiments, Bertholet has put forth the hypothesis that carbonic acid, everywhere infiltrated into the crust of the earth, may, on coming in contact with the alkali metals, form acetylides; or that these radicals may result from the contact of earthy carbonates with alkali metals, at or below a dull red heat.

These radicals once formed, and subjected to the action of heat, water, etc., admit of an almost infinite variety of reactions, by which all the natural hydro-carbons may possibly be produced.

By the mail which arrived on Tuesday last, we are further informed that, in the continuation of these researches, M. Bertholet has succeeded in still further building up this organic structure, so wonderfully begun, by the addition of  $O^3$  to his  $C^4H^2$ , which constitutes the exact formula of *oxalic acid* ( $C^4H^2O^3$ ), and that the substance so produced is actually the commercial article known by that name!

Other carbides of hydrogen have also been oxidized with the same success, giving a great variety of appropriate products; and we may here mention, that the first of these singular facts was demonstrated by the formation of alcohol by the direct union of carbon and hydrogen, which was performed by Bertholet alone.

His experiments with the hydro-carbons have led him to conclude that the process of the distillation of coal actually produces a portion of the substances derived therefrom by a chemical union of the carbon and hydrogen in the presence of heat and steam.

His latest success has been the formation of toluol, the base of the new and rich toluen red ( $C^{14}H^3$ ). The composition of this substance indicates the addition of marsh gas ( $C^2H^4$ ) to benzene ( $C^{12}H^6$ ), with the loss of two equivalents of hydrogen. M. Bertholet is still pursuing his wonderful line of investigation and achievement, in which he has opened a most unexpected door to the chemical creation of the products of organic life!

BANANA PLANT.—An effort is being made to introduce the culture of the banana into California. Several of these plants brought here from the Sandwich Islands a few years since, are now growing finely, and it is believed that in the warmer parts of California say in Los Angeles, Santa Clara, Yuba and Solano counties, the plant can be grown to advantage with slight trouble, especially in sheltered localities. It is claimed that the banana will produce more food to the acre than any other known plant. A large number of plants were brought up by a late Panama steamer, with the view of still further testing the possibility of their culture in this State. The tree is ornamental as well as useful.

## The California Flour Trade.

The present week closes the harvest year of 1866, and during the year not less than 290,000 tons of wheat have been received at this port from the interior! Of this amount 250,000 tons have been shipped abroad. The first sale of the crop was made at \$1.60 per 100 pounds; the highest figure reached was \$2.25, at which but little changed hands; the lowest quotation has been \$1.45, at which figure a considerable quantity was sold. The average for the year has not been far from \$1.76—equal to a grand total, if it had all left the State as wheat, of \$8,800,000. The average price of flour shipped has been about \$6.25.

The total receipts for wheat and flour shipped from this port the past year, will very nearly reach the round sum of *ten millions of dollars!* This, it should be recollected, implies the production of that amount in excess of our own consumption, and all that has been sent over the mountains for the supply of the State of Nevada and the neighboring territories. It is a large amount to form a single item of our agricultural productions, and is an earnest foretaste of what may be expected in the future, when the capacities of our State shall be tested to their utmost extent. As yet but a mere tithe of the wheat lands of California have been improved; present appearances indicate that the coming year will be equally as productive as the past.

The reputation of California wheat and flour in the Eastern States and Europe, is second to that of no other country. The profits of shippers during the past year have in some cases, been very large. The ship David Crockett's cargo to Philadelphia, paid its owners over \$60,000 clear profit. At one time when wheat was selling in New York for \$5.66 per 100 pounds, it could be bought in this city for \$2.50 currency, or \$1.90 gold—2½ cents per pound here against nearly six cents in New York! The profit on such shipments can be easily perceived, when it is stated that the freight in sailing vessels averages but a small fraction over one cent per pound.

The Panama steamers, alone, have carried to New York during the past year, about 130,000 barrels of flour. Five ships were loading in this port at one time in April. Wool, hides, and other products pressing for shipments, have had to give place to wheat and flour, on account of the high freight which those articles were able to bear. The future of the wheat trade of this city baffles all calculation. We have an open market in almost every part of the world. The Atlantic States, England, Ireland, France, Japan, China and the islands of the Pacific, are all within our reach, and can all be supplied at a fair profit by California shippers. The rewards which have attended the labors of the husbandmen of our State for the past year, have demonstrated the great advantages which may be desired for a more extended cultivation of the soil, and have shown that there are other golden crops to be realized than those dug out of our gravel placers or rocky mountain sides.

F. AMELIA COOK, M.D., a regular graduate of a medical institution in Philadelphia, has opened an office for the practice of medicine at No. 33 Kearny street. We believe that Miss Cook, who is respectfully connected in this city, is the first regular female graduate who has located here. There are now quite a large number of such persons practicing medicine at the East, with much credit to themselves and satisfaction to the public. These regular graduates should never be confounded with the great numbers of pretended clairvoyants and others, who are mere quacks, and who are very properly debarred from any regular standing, either in the community or in medical societies.

DR. BOYNTON'S MEDICINE CHEST can be examined at this office. To families, miners and ranchmen, it is invaluable.

## The Railroad Across the Continent.

The work on the eastern division of the Central Pacific Railroad is being pushed forward with wonderful rapidity and energy. The process of track laying is said to be proceeding at the rate of nearly two miles a day. This part of the work, although it appears to be systematized to the utmost extent, is undoubtedly conducted at a considerable sacrifice of economy, to speed.

The cars that bring up materials to the front are loaded with great care, each carrying a certain number of rails, and the exact number of chairs and spikes required to lay them. These are sent out to the work, and the "boarding cars" in which the workmen live, having been pushed as far as possible toward the end of the track, the materials are thrown on behind them, then the boarding cars shoved back, and the small cars used in laying the rails come up to the piles of new material. The process of laying the track is thus described by an eye-witness:

"A small car having been loaded in the same manner, and with the same precision as the large ones had been, was run forward to the end of the track by horse power. A couple of feet from the end of the rails already down, chocks were placed under the wheels, stopping the car at once. Before it had well stopped a dozen men grasped a rail on each side, ran it beyond the car, laid it down in its chairs, gauged it, and ere its clang in falling had ceased to reverberate, the car was run over it and another pair of rails drawn out. This process was continued as rapidly as a man would walk. Behind the car followed a man dropping spikes, another setting the ties well under the ends of the rails, and thirty or forty others driving in the spikes and stamping the earth under the ties. The moment that one car was emptied of iron, a number of men seized it and threw it off the track into the ditch, and the second followed on with its load."

The writer of the above has evidently drawn considerably on his imagination with regard to the rapidity of the progress of the work; although the particulars of the manipulation may be correct in the main. Laying rails "as rapidly as a man would walk," would imply at least ten or twelve miles a day—less than two miles is probably the fastest time yet made, although the telegraph lately claimed *three*. No doubt the work is being pushed forward with the most astonishing rapidity.

On the first of January last, the rails were laid 305 miles west of Omaha, and fully equipped with everything for the most economical work, both for freighting and passenger carrying. By the first of September next, the contractors expect to have the road completed to the base of the Rocky Mountains, 517 miles this side of Omaha (formerly Council Bluffs, on the Mississippi river). If this is accomplished, it will be at the average rate of nearly one mile a day, from January 1st to September 1st, of the present year.

As the contractors on this end of the route are prosecuting the work with the same degree of energy, it is confidently expected that the scream of the locomotive from New York, will be heard on the western flank of the Rocky Mountains, answering to that from San Francisco, by the end of the present decade, or within two years and a half from date!

THE UNIVERSAL EXPOSITION.—A very interesting letter, from a well known citizen of San Francisco, descriptive of the Paris Exposition, will be found on another page. It appears to fully justify the charge of mismanagement on the part of those who have charge of the American Department. Californians appear to be especially in the back ground. Such a condition of things ought not to have been allowed.

HUNTER'S AMALGAMATORS.—Mr. Hunter is constructing four of his largest size rubbing amalgamators, to the order of Prof. Silliman, for a 20-stamp mill now being erected on the Quail Hill Co's ground, near Telegraph City, in Calaveras county. The rubbing surface of each of these machines will be about four feet eight inches wide by six feet in length, and will contain about sixty square feet of copper plates.



OUR SEMI-ANNUAL INDEX.—We would call especial attention to the full and copious index of the present volume, which we give to-day. Therein will be found reference to all the new inventions on this coast during the past six months; all patents issued during that time to inventors in the States and Territories of the Pacific coast; all the most important themes discussed at the California Academy of Natural Sciences; all new discoveries in science, and all important improvements in the mechanic arts (as given from week to week under our respective heads of scientific and mechanical miscellany); all matters noted in our "Notices to Correspondents," a great variety of general and miscellaneous matters discussed editorially, by correspondents, or in selected articles; new incorporations, and elections of mining officers in this city, etc., etc.

PARIS EXPOSITION.—AWARDS, ETC.—The telegraph reports 524 United States exhibitors at Paris. There have been awards in favor of 262, including four grand prizes and 17 gold, 62 silver, and 103 bronzo medals. Seventy-nine American exhibitors are honorably mentioned. It has already been announced that the United States has been awarded the first prize for locomotives and piano-fortes.

At a meeting of the Paris Exposition Committee of this city, held on Tuesday last, the Finance Committee reported that \$1,145 had been collected through subscriptions; that \$139.50 had been paid for boxes, packing and incidental expenses, leaving a balance on hand of \$1,005.50. The Secretary was directed to forward \$500 to Munroe & Co., Paris, as suggested by Professor Blake, and hold the balance subject to Professor Blake's order, after paying any demands that may be presented.

### Cholera---Perry Davis' Vegetable Pain Killer.

MR. PERRY DAVIS, Sir:—The benefits I have received from the use of your invaluable remedy, the Pain Killer, induces me to pen a word in its praise. Experience has convinced me that for Headache, Indigestion, Pain in the Stomach, or any part of the system, severe Chills, Weariness, common Colds, Hoarseness, Cholera, Cholera Morbus, Diarrhoea, Dysentery, Toothache, etc., there is nothing better than the Pain Killer. I have this hour recovered from a severe attack of the Sick Headache, by using two teaspoonfuls, taken at thirty minutes interval, in a wine glass full of hot water. I am confident that through the blessing of God, it saved me from the cholera during the summer of 1843. Travelling amid dust, toil, change of diet, and constant exposure to an infected atmosphere, my system was daily predisposed to dysentery attacks, accompanied with pain, for which the Pain Killer was a sovereign remedy. One teaspoonful cured the worst case in an hour, or, at most, half a day! I have heard of many cases of dysentery being cured by its use. Put in the teeth, it will stop the toothache. Gratitude, and a desire for its general use, has drawn from me this unsolicited testimonial in its favor.

D. T. TAYLOR, Jr., Minister of the Gospel.  
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26v14n9p SAN FRANCISCO.

## BLAKE'S PATENT QUARTZ CRUSHER.

### CAUTION!

The owners of the Patent for this valuable machine, in order to facilitate the protection of their rights against numerous infringers, procured, some time since, a release of the Patent, bearing date January 9th, 1856.

This Patent secures the exclusive right to employ in Stone-Breaking Machines Upright Convergent Jaws, actuated by a Revolving Shaft.

All persons who are violating the Patent by the unauthorized making, selling or using machines in which quartz or other materials are crushed between upright convergent jaws, actuated by a revolving shaft, are hereby warned that they are appropriating the property of others, and that they will be held responsible in law and in damages.

Several infringing machines are made and offered for sale in this city, upon which Patents have been obtained. Manufacturers, purchasers and users, are notified that such Patents do not authorize the use of the original invention, and that such machines cannot be used without incurring liability for damages.

BLAKE & TYLER,  
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## Crawford's Stump and Rock Extractor and Elevator.



STUMP AND SNAG PULLER.

PRICE OF MACHINES.—No. 1, 10 tons, \$200; No. 2, 15 tons, \$275; No. 3, 20 tons, \$350. Small Model Machines—weight 30 pounds—lift 1 1/2 to 2 tons, \$75; other sizes to order.

These Machines are adapted to all kinds of work, and where labor is scarce they are invaluable. Two men can work the machine. A few of their uses are: Loading boilers, granite, heavy ordnance in casemates, or any heavy body. For mountain teamsters they are of great value. Lifting wagons, etc., clearing lands of stumps, moving boulders for railroads, or for railway companies. There is scarcely any work of moving heavy bodies which they are not adapted to. Single Machines, or Right of City or County, and all information can be obtained by letter, or otherwise, by application to  
San Francisco, April 17, 1867. [16v14cow1m]



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## TO MINERS, MILLWRIGHTS AND FARMERS.

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### EXCELSIOR

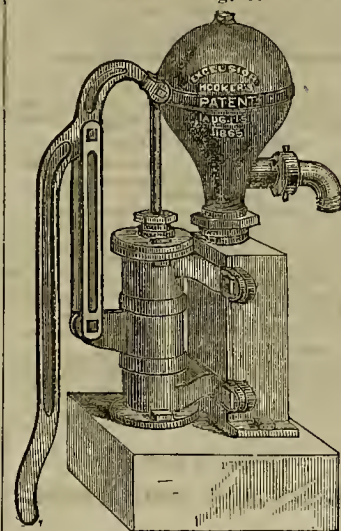
#### Double-Acting Suction and Force Pump.

Hooker's Patent, Aug. 15, 1865.

This Double-Acting Suction and Force Pump, the best in use, is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and is warranted to furnish more water, than any other Pump of equal caliber. It has Puppet Valves, faced with vulcanized rubber, which cannot be wrongly placed in the Pump. The valves can be changed without disconnecting air-chamber, suction or discharge pipes.

In case of necessity, the Pump can be run at any high rate of speed, and will furnish water proportionately. The Excelsior Pump is equally adapted to use for surface and deep wells or shafts. It can be run by windmill or horse power for irrigating purposes; also by hand or steam power on steamers and ships. For domestic use, no better Pump can be found.

Fig. 3.



By simply loosening the nut seen at the base of the Air-Chamber, the discharge nozzle may be turned, thus making a right or left-hand Pump.

Fig. 4.

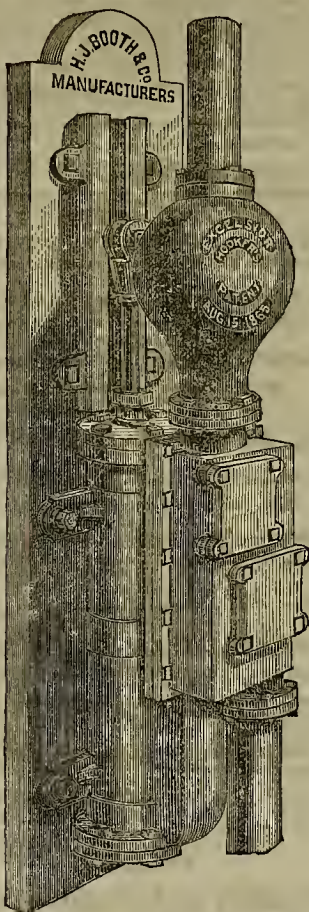


Fig. 3 represents a Hand Pump, which works very easy, and with even power. Fig. 4 is a 6-inch Mining Pump, showing adjustable bonnet of the valve chest.

For Circulars, or further particulars, inquire of or address J. W. BRITTAN & CO., Agents 120 Front street, San Francisco; H. J. BOOTH & CO., Union Iron Works, First street, or  
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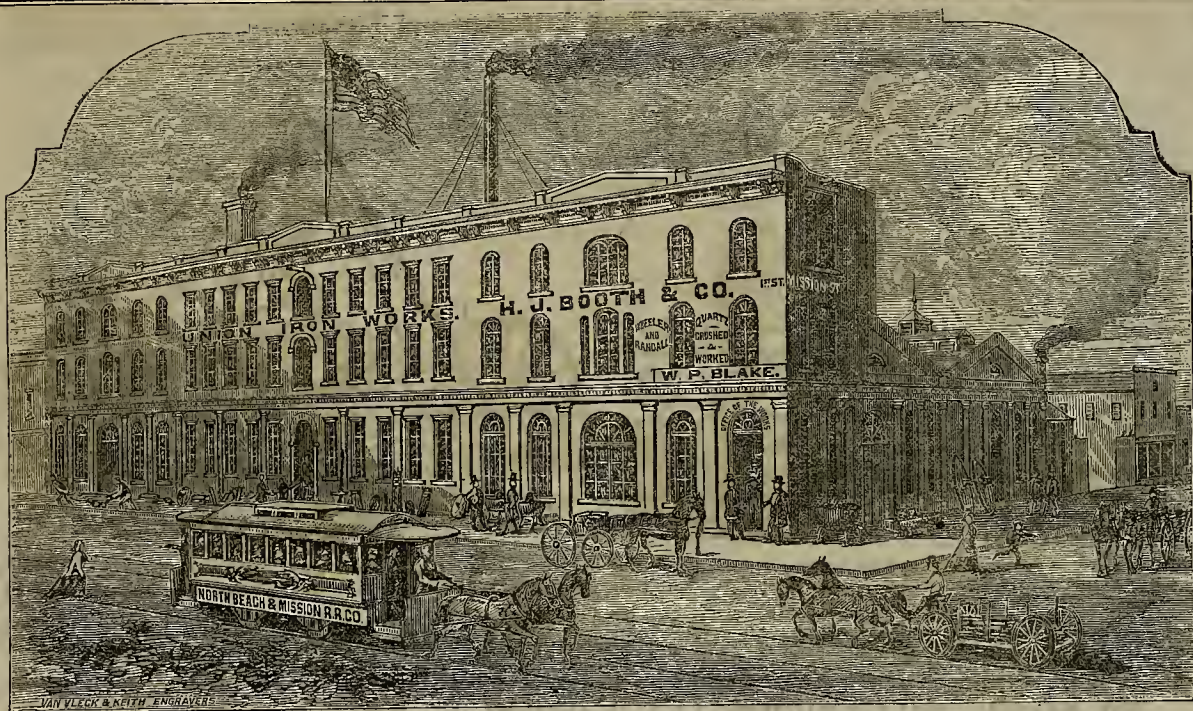
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**HANSCOM'S CRUSHER,**  
The best of the kind now in use in this State or anywhere else  
**Wheeler & Randall's New Grinder and  
Amalgamator,**

Which only needs examination to be appreciated.  
**Tyler's Improved Water Wheel,**  
Giving greater power at lower cost, than any wheel in use. Send for one of our circulars, giving full tables.

All Wheels warranted to give the power as set forth, or the money will be refunded.  
**Sole makers for this coast of the "Pendergast  
White Iron Stamp Shoes and Dies."**

None genuine unless obtained from us. Every one warranted.  
Patented Machinery of all kinds will be furnished by us at market prices. Particular attention given to drawings and specifications of machinery, which will be made in order. The patronage of the public is respectfully solicited.  
19v12

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**Foundry and Iron Works.**

**HINCKLEY & CO.,**

MANUFACTURERS OF

**STEAM ENGINES,**

**Quartz, Flour and Saw Mills,  
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Improved Crusher, Mining Pumps,  
Amalgamators, and all kinds  
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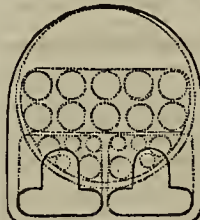
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SAN FRANCISCO.

**MARINE,  
Locomotive,  
And all kinds of  
HIGH PRESSURE  
Steam Boilers**  
MADE.

All Boilers guaranteed and tested by U. S. Boiler Inspector before sent out of the Shop, at Shop expense.

All kinds of Sheet Iron and Water Pipe, Coal Oil Stills, Wrought Iron Worms, etc., etc. Manufactured to Order.

**Old Boilers Repaired  
D. CAMERON.**



6v12-1y

**A FOUNTAIN TREE.**—A healthy poplar, seven or eight years old, is taken from its native soil, and a cold iron borer is run up the heart of the trunk, from the roots, for six feet, by which means the pith is removed and the trunk is made to assume the character of a pipe. A hole is then bored through from the outside of the trunk, to communicate with the highest point reached by the former operation, and in this second hole, a short distance above the root, in a part of the trunk which will be buried in the earth when the tree is replanted, and the poplar is then fixed in damp ground, with the pipe at its root in connection with one of the little runs of water which abound in meadows at the foot of hills. A well known property of fluids produces then the strange effect of an unceasing flow of water from an iron spout in the trunk of a living tree: and as poplars love water, the fountain-tree thrives, and is more vigorous than its neighbors.

**FIRE CLAY NEAR CENTRAL CITY, COLORADO.**—Mr. Burlingame, says the Colorado Miner, assayer and analytical chemist, recently made a test of some of the fire clay lately discovered near Central City. It stands the heat well, and the new discovery will prove quite an acquisition to the Territory in the way of supplying the mountain furnaces.

THE death of one person from the pork disease, in Springfield, has caused the people there to abandon pork pretty generally. An exchange says that a dozen deaths from rum wouldn't frighten them half so much, nor damage the trade in the least.

IT IS SAID that fourteen thousand four hundred and twenty-three tons of stone were thrown out by a single blast, with three kegs of powder, at a quarry in Middletown, Conn., on the 7th instant—the largest blast ever made there.

**CHALK.**—Five or six miles from town, says the Alpine Miner, in a northerly direction, is a large ledge of what our carpenters pronounce a superior article of chalk—white chalk.

**TOWNE & BACON,**  
Book and Job Printers,  
Have the Largest Office,  
Do the most work,  
And do it better

Than other offices

In this City,  
**536** Try them

With a Job,  
And you will be

Satisfied the above

Statements are facts.

Their office is at 536

Clay St., below Montgom'y,  
Over Pacific Fruit Market.

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**CLERC & CO.,**

Iron Founders, Steam Engine Builders, and  
Makers of all kinds of Machinery.

No. 28 FREMONT STREET, San Francisco.  
9v146m

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**MARINE ENGINES,  
AND ALL KINDS OF  
MACHINERY FORGING.**

All kinds of Ship-smithing and Mill work manufactured to order. Jobbing of every description promptly attended to. All work done guaranteed. 13v14-1y

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Steam Engine Works,**

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**STEAM ENGINES OF EVERY DESCRIPTION BUILT  
to order—Marine, Stationary, or Locomotive.**

**HOISTING AND PUMPING ENGINES,  
PORTABLE ENGINES, OF ALL SIZES,  
DONKEY PUMPS, Etc., Etc., Etc.**

The attention of the parties engaged in shipping or inland navigation is called to the

**Superior Workmanship**  
of Mr. LOCHHEAD, who has been in the business in San Francisco for the last fourteen years, and enjoys the reputation of having built ONE HUNDRED AND SEVENTEEN STEAM ENGINES

Screw Propellers of all kinds, and Steam Boat Machinery generally, made to order, and warranted to give perfect satisfaction in every particular. 25v12-3m



**A SHOWER OF MOLTEN IRON.**—The Louisville Courier of May 23d, described an explosion which took place at Long's foundry in Louisville, the day previous. It appears that the explosion was caused by pouring molten iron into a mold, into which rain had dripped. About a ton of iron was sent through the building, the chief portion being hurled directly upward through the roof. The shock was so heavy as to break the glass more or less for two entire blocks. The man holding the ladle was thrown out of a window—seriously burned, but not killed. No other person was seriously injured.

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PHOTOGRAPHER.**

Nos. 25 and 27 Third street, east side, near Market street, San Francisco.

Enamelled Cards, Ambrotypes and Sun Pictures, executed in a superior manner. Small pictures copied and enlarged to any size, at one-half the price usually paid for such work. Cartes de Visite only \$4 per dozen; Vignettes at \$4 per dozen. We warrant our work to be superior to any made in this city or State. Give us a call and see our specimens. 5v14 6m

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IMPORTERS,  
AND DEALERS IN**

**ASSAYERS' MATERIALS,  
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SAN FRANCISCO.**

WE are receiving direct from MESSRS. LAD & OERTLING (London) and BEEKER & SONS (Antwerp, Belgium) their superior

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And from France and Germany, as well as the Eastern States, FURNACES, CRUCIBLES, SUPPLIES, BLOW-PIPE CASES, GOLD SCALES, CHEMICAL GLASSWARE, and every article required for ASSAY OFFICES, LABORATORIES, etc. We have given this branch of our business particular attention, to select such articles as are necessary in the development of the mineral wealth of this coast. A Full Assortment of DRUGGISTS' GLASSWARE and DRUGGISTS' SUNDRIES, ACIDS and CHEMICALS, constantly on hand. San Francisco March 6, 1865. 11v10-4f

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**SARSAPARILLER  
BITTERS**

POSSESS INVALUABLE PROPERTIES.

They give Health to the Sick,

Strength to the Weak,

Joy to the Afflicted,

Sold by the principal Druggists and Liquor Dealers on the Pacific Coast. 2v14 11f

**PACIFIC POWDER MILL**

**COMPANY'S**

**BLASTING POWDER!**

MANUFACTURED

IN MARIN COUNTY,

CALIFORNIA.

FOR SALE BY

**HAYWARD, COLEMAN & CO.,**

AGENTS,

414 Front Street, San Francisco. 3v14-1m

**Piles! Piles! Piles!**

NOT PILES OF GOLD, NOR YET OF SILVER, SO much coveted by all men; but the BLEEDING, BLIND or EXTERNAL PILES, can be easily and speedily cured by the use of

**WOOD'S SUB-POSITORY.**

It is a preparation totally distinct from anything heretofore offered as a remedy for this painful and often fatal complaint. The SUB-POSITORY is neither a pill, powder, wash or salve, and yet it has proved to be a certain Remedy for the Piles. Do not doubt this assertion, or delay testing the truth of it if you are troubled with the Piles—you will not be deceived in it.

Sold wholesale and retail by J. H. REDINGTON & CO., Nos. 416 and 418 Front street; GEO. GRISWOLD, corner of Mission and First streets; OLD FAMILY DRUG STORE, corner Mission and Second streets; UNITED STATES DRUG STORE, Bush street, between Montgomery and Kearny.

C. WOOD, Proprietor, No. 63 Tehama street, between First and Second. 2v14 13m



**THE PACIFIC IRON WORKS,**

First & Fremont Sts., between Mission & Howard, San Francisco.

The proprietors of the above Works invite the attention of all parties interested to their greatly improved and unequalled facilities for manufacturing Steam Engines and Boilers, both Marine and Stationary, of any required size and pattern. Quartz Mills, Amalgamating, Pumping and Hoisting Machinery of the most approved construction. Flour, Saw, and Sugar Mills, Water Wheels, &c., &c. Our pattern list is most complete and extensive, embracing the late improvements in all classes of machinery adapted to use on this coast. We would call especial attention to the fact that we have secured the exclusive right of manufacture for the Pacific Coast of the celebrated Greeno Engine, conceded to be the most economical and perfect working Engine now in use. We are also exclusive manufacturers of the celebrated

Bryan Battery, Varney's Amalgamators and Separators, Ryerson's Superheated Steam Amalgamators and Rotary Crushers, Stone Breakers, &c. Orders respectfully solicited.

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Mediterranean and California

FRUITS, NUTS, CONFECTIONERY, Etc.,

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Constantly on hand, and sold at Factory prices. Also,

ENGLISH AND SWISS WATCHES,

Imported directly from the Manufacturers.

The American Company are now making

VERY FINE WATCHES FOR LADIES.

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IMPROVED NOISELESS

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And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the Mining and Scientific Press!

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Nos. 635 and 637 Commercial Street,

WILL INTRODUCE

On Saturday, February 9, 1867,

An Entirely New Style of

**Cloth Cashmere Hat**

"YACHT HENRIETTA,"

Which are the most dressy Hat ever introduced on the Pacific Coast. 8v14

Call and see them.



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**JACKSON STREET,**

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Prices varying from \$1.50 to \$2 per day for Board and Room.

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Trains belonging to the House will be in attendance at all the boats and cars to convey passengers to the House free of charge, and to any part of the city for 50 cents.

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Russia Iron Screws, of any degree of fineness. We are the only manufacturers on this coast of the "Hicks Engine," the most compact, simple in construction, and durable of any Engine in use.

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THE WORLD RENOWNED REPUTATION TOGETHER with the extensive and increasing demand for Dr. Hufeland's Swiss Stomach Bitters, will at once recommend them to the favorable notice of all consumers and lovers of a good and healthful tonic and invigorator. As a purifier of the blood, acting surely, yet gently, on the secretions of liver and kidneys, they are unsurpassed and a most agreeable drink.



For sale at all wholesale and retail stores on the Pacific Coast, and at the depot of TAYLOR & BENDEL, 413 and 415 Clay street, between Sansome and Battery, San Francisco. 20v14-6m

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THE UNDERSIGNED HAVE FORMED A COPARTNERSHIP, under the firm name of D. A. MACDONALD & CO., for the purpose of carrying on the business of sawing and planing, and the manufacture of Doors, Sashes, Blinds, Mouldings and House Finish of every description, at the corner of Market and Beale streets, where we will be happy to receive a call from our old patrons.

D. A. MACDONALD, J. H. MACDONALD,  
JOS. MCGILL, HOWARD CHAPMAN.  
San Francisco, Feb. 1, 1867. 12v13-3m

**California Steam Navigation**

**COMPANY.**

Steamer CAPITAL.....CAPT. E. A. POOLE

" CHRYSOPOLIS.....CAPT. A. FOSTER.

" YOSEMITE.....CAPT. A. FOSTER.

" CORNELIA.....CAPT. W. BRIMLEY

" JULIA.....CAPT. E. CONCKLIN.

One of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), for Sacramento and Stockton, connecting with light-draft steamers for Marysville, Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

**JOHN BENCHLEY,**

President.

13v12



## Important Notice.

## Another New Doctor in the Field!

DR. H. A. BENTON,

Has been performing many wonderful cures in this city the past two years, and, as his practice is fast increasing at the office, he finds it difficult to attend all the outside calls, and has concluded to invite R. H. OLMSTEAD, M.D., to join him. Dr. Olmstead, of Napa City, has been eighteen years successfully treating obstinate cases with water, electricity, and the magnetic forces. Remedies of the Eclectic School, of which he is a graduate, can be resorted to when needed. Being the seventh son of a celebrated physician, and at the same time having a powerful organization, his magnetic hands like magic dispel pain and disease. He is also a natural bone-setter. Dr. Olmstead has this day associated with Dr. H. A. Benton, the Medical Electrician and Homeopathist, at his office, 314 Bush street, San Francisco, who, having all the necessary facilities, such as the patent Electric, Chemical, Sulphur, Vapor, Hot Air and Medicated Baths, which aid in curing all curable diseases, whether acute or chronic, and with the combined skill, together with an excellent lady assistant, gives an assurance of cure to many, benefit to all, and injury to none.

N. B.—Terms for treatment within reach of all. Office hours: from 9 A. M. to 8 P. M.; Sundays, by appointment. Lodging rooms convenient for those who come from the country.  
June 1st, 1867. 22v14-cow4t

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## LABORATORY,

Corner of Seventh and Townsend Streets.

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Orders will be received at the office on'y for Chemicals of every description, which will be manufactured as may be required. The Company beg to say that they have the advantages of all improved machinery and apparatus for the manufacture and manipulation of these products, and our Laboratory is fitted up with the most recent improvements which experience and science suggest, and is surpassed by none in completeness and perfection for the purposes it is designed. 9v14 3m

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OUR IMMENSE STOCK

Fine Custom Made Clothing

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AT PRICES THAT DEFY COMPETITION.  
Our Stock of Clothing Consists of  
ALL THE LATEST STYLES

BOTH OF MATERIAL AND FINISH.

A Large Assortment of

Trunks, Valises, Carpet Bags, Blankets, Etc.,

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Real Estate, Stock and General Auctioneers.

Office and Salesroom, 327 Montgomery st.

H. A. COBB, - - - - - Auctioneer.

## Guardian's Sale of Real Estate.

NOTICE IS HEREBY GIVEN, THAT IN PURSUANCE of the order of the Probate Court of the City and County of San Francisco, in the State of California, made on the 25th day of January, A. D. 1867, in the matter of the guardianship of the person and estate of Bertha Louisa Washburn, a minor, the undersigned, Guardian of the person and estate of said minor, will sell at public auction, to the highest bidder, for cash, in separate parcels, and subject to confirmation by said Probate Court, on SATURDAY, the 6th day of July, A. D. 1867, at 12 o'clock M., at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, in said City and County, all the right, title, interest and estate of said minor in and to each of those lots, pieces or parcels of land situate, lying and being in the said City and County, and described as follows, viz:

PARCEL No. 1.—Lot on the west side of Stockton street, commencing 98 3 12 feet north of Jackson street; thence north 20 feet 7 1/2 inches, by a depth of 93 1/2 feet.

PARCEL No. 2.—Lot on the east side of Stockton street, commencing 87 1/2 feet north from N. E. corner of Stockton and Greenwich streets; thence north 50 feet, by a depth of 137 1/2 feet.

PARCEL No. 3.—Lot on S. W. corner of Sacramento and Gustavus streets, 60 feet front on Sacramento street by 77 1/2 feet deep on Gustavus street.

Terms and conditions of sale—Cash, to be paid on the day of sale.  
Guardian of the person and estate of said minor.  
San Francisco, June 11th, 1867. 24v14-3w

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Mantels, Monuments, Tombs, Plumbers' Slabs  
Etc., On hand and Manufactured to order.  
Goods shipped to all parts of the State. Orders respectfully solicited. 5v8-3m

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ARTIFICIAL LEG,  
Manufactured in Philadelphia, Penn.  
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SOLE MANUFACTURERS OF THE CELEBRATED  
H. & L. AXLE GREASE,  
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OUTLERS, LOCKSMITHS, BELLHANGERS  
And Model Makers.

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LEATHER HOSE AND BELTING,  
ALL SIZES.  
SUCTION HOSE MADE TO ORDER  
At short notice, by

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Cordage Manufactory!  
CONSTANTLY ON HAND A LARGE ASSORTMENT  
—OF—

## MANILA CORDAGE,

Whale Line, Bale Rope, etc.,

Manufactured from Pure Manila Hemp.

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Petroleum Oil Works.

J. H. WHITE & CO.,  
No. 109 Commercial street, San Francisco,  
Are now manufacturing  
LUBRICATING OILS & AXLE GREASE,

From Petroleum of California, and ask to be encouraged by the citizens of California. As a home production in all their parts, these Lubricators are equal to any in the market, and surpass all others for cleansing off gum caused by the use of animal oils which contain stearine and margarine, which soon become acid. A fair trial, at the low price asked, is all that we solicit. 25v14tf

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Sole Agents for Barstow's Metallic Burial Cases and Caskets. 25v14tf

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2v8

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(Graduate of the Mining Academy, Freiberg, Germany.)  
Oro, Flint District, Owyhee Co., Idaho.  
REFERENCES.—George Hearst, John W. Gashwiler, Richm. Hemme & Co., and J. M. McDonald, San Francisco; E. R. Purdie, New York; William Bigler, Penn. 15v14-3m

## FREDERICK MANSELL.

Mechanical & Architectural Draughtsman,  
No. 422 California street, corner of Leidesdorff.  
Drawings of Monets made for parties applying for patents at Washington or London. mar23-1f

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Circulars, Containing valuable information to Inventors,  
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FELTON & TAYLOR,  
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Card and Seal Engraver,  
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Wedding and Visiting Cards printed with the utmost neatness; Notarial, Commissioner and Society Seals. 19v13-2q

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Is prepared to fulfill all orders at the shortest notice.  
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Homœopathic Physician  
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24v14y

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DENTIST,  
No. 634 Washington Street,  
Between Montgomery and Kearny Streets  
[OVER SAN FRANCISCO BATHS]  
SAN FRANCISCO. 20v10-qy

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DENTIST.  
Office, 647 Clay street,..... San Francisco.  
First-class gold fillings for \$3, as good as any dentist can produce in the city. Dr. Winter has practiced Dentistry twenty years—fifteen in this State. For a full upper set of gum teeth, on vulcanite base, from \$20 to \$35. Teeth extracted without pain by local application. 18v14-1f

RADICAL CURE  
—OF—  
RUPTURE!  
Treatment of all Deformities of the Body, by DR. A. FOLLEAU'S process. 624 Washington street, up stairs, Washington Baths Building, between Montgomery and Kearny streets.

DR. A. FOLLEAU  
Has his studios and manufactories in the same building. Every kind of Apparatus, Trusses, Orthopedic Instruments, Artificial Limbs, etc., are manufactured and applied by himself.  
He has no connection with any Agency. 24v14-11p1f

## Metallurgy.

BOALT & STETEFELDT,  
Metallurgists and Mining Engineers

AUSTIN, NEVADA.

Western Branch of ADELBERG & RAYMOND, No. 90  
Broadway, New York. 11v11

O. W. MAYNARD. J. H. TIEMANN.  
MAYNARD & TIEMANN,  
Mining Engineers and Metallurgists,  
240 Pearl street, New York,  
—AND—  
CENTRAL CITY, COLORADO.  
19v12-1y

REMOVAL.  
PACIFIC CHEMICAL WORKS.

FALKENAU & HANKS HAVE REMOVED THEIR OFFICE to 623 Montgomery street, opposite Montgomery Block, where they will receive orders for Chemicals of all descriptions, and for Assays and Analyses of Ores, Minerals, Metallurgical Products, Mineral Waters, Commercial Articles, etc. Laboratory, corner of Center and Folsom streets, Mission. 24v14-4v

EUROPEAN  
METALLURGICAL WORKS,  
—AND—  
Practical Mining School,

Bryant Street, Between Third and Fourth,  
SAN FRANCISCO.

THE Proprietors are at all times prepared to work or test Ores sent to this establishment—either in large or small quantities—by such process as may be found best adapted to their chemical character, after a careful analysis has been made. Test lots of Ore adapted to the smelting process at the works. Sulphuric, pyrites, and the so-called "rebellious ores," are having especial attention paid to their successful treatment. Assaying in the humid and dry way. Also, raining by cupellation, done at moderate rates.

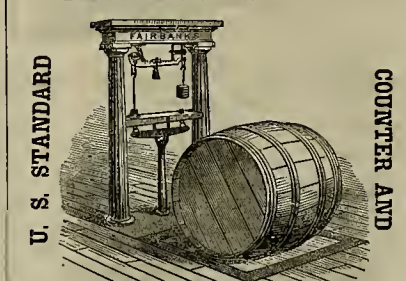
PRACTICAL MINING SCHOOL.  
The proprietors—encouraged by numerous applications from gentlemen desirous of pursuing the study of practical metallurgy—have concluded to admit parties on reasonable terms. Having in their Mill all the necessary appliances for crushing, roasting, amalgamating, smelting, refining and assaying, as also a well extended Laboratory for the analysis of Ores and Minerals, a good opportunity is here offered to acquire a sound practical knowledge of the business.  
S. F. KIMBALL, J. R. MURPHY.  
10v10

J. A. BAUER,  
Chemical Laboratory,  
AND DRUG STORE,  
644 Washington Street. [Established 1849.]  
SAN FRANCISCO.

Careful Analyses made of  
Ores, Minerals, Waters, Oils, Liquors,  
Wines, Products of Art, etc.

Pharmaceutical Preparations Made to Order.  
Opinions given on Chemical Questions and Geology.  
Particular attention paid to Analyses of all kinds, in cases where legal questions are involved.  
Pure Nitric Acid, Nitrate of Silver, Cold Chloride, Platin Chloride, Sodium Amalgam, Sulphate of Copper, etc., for sale. 12v14-6m

## FAIRBANK'S PATENT



PLATFORM SCALES!  
Also, large Scales for weighing loaded wagons of Ore, Hay, etc., from 6,000 to 40,000 pounds capacity. Manufacturers' Branch House.  
FAIRBANKS & HUTCHINSON,  
120 California street, San Francisco. 24v14-cow6m  
Send for a Catalogue.

## BLASTING POWDER.

PRICE, \$3.00 PER KEG.

SPORTING, CANNON AND MUSKET  
POWDER,

Of superior quality.  
FUSE AND SHOT,  
Always on hand and for sale at the office of the

CALIFORNIA POWDER WORKS,

No. 318 California Street.

JOHN F. LOHSE, Secretary.

25v14qr



## Pacific Mail Steamship Co's

## STEAMSHIPS FOR

## NEW YORK, JAPAN AND CHINA.

LEAVE FOLSOM STREET WHARF, AT 11 o'clock A. M. of the following dates, for FAKAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 18th and 30th of each month that has 30 days.

On the 10th, 18th and 30th of each month that has 31 days.

Through Tickets for Liverpool by the Canard, Inman and National Steamship Lines, can be obtained at the office of the P. M. S. Co., San Francisco.

For Merchandise and Freight for New York and way ports, apply to Messrs. WELLS, FARGO & CO.

THE COLORADO will be dispatched July 4, at noon, and will be followed by the GREAT REPUBLIC, on August 24th, from wharf corner of First and Brannan streets, for YOKOHAMA and HONGKONG, connecting at Yokohama with the steamer COSTA RICA for SINGAPORE.

For passage and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorf streets.

OLIVER ELDRIDGE, Agent.

## H. C. HOWARD,

Member of the San Francisco Stock and Exchange Board.

(Exclusively commission business.)

No. 436 California street, next door below Montgomery.

25147

## New Mining Advertisements.

## Adella Gold Mining Company, Rock Creek, Sierra County, California.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-ninth day of May, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E F Bauldwin.....	22	10	\$10 00
E F Bauldwin.....	23	40	40 00
E F Bauldwin.....	16	10	10 00
E F Bauldwin.....	18	50	50 00
Adella Bauldwin.....	14	400	400 00
Adella Bauldwin.....	15	40	40 00
L G Brown.....	19	200	200 00
L G Brown.....	20	30	30 00
L G Brown.....	21	20	20 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-ninth day of May, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Olney & Co., auctioneers, at No. 418 and 420 Clay street, San Francisco, Cal., on Monday, the fifteenth day of July, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. C. TAYLOR, Secretary.

Office, 429 Pacific street, San Francisco, Cal. j29

## Chilpana Mining Company—District of Urea, Sonora, Mexico.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 28th day of May, 1887, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Moshelmer, Jos.....	66	25	\$125 00
Moshelmer, Jos.....	67	26	130 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-eighth day of May, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by J. Middleton & Son, 401 Montgomery street, San Francisco, Cal., on Monday, the fifteenth day of July, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOHSE, Secretary.

Office, 518 California street, San Francisco, Cal. j29

## Camacho Gold and Silver Mining Company, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of June, 1887, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable on or before the second day of August, 1887, in United States currency, (1) the Secretary, San Francisco, Cal., on Monday, the twenty-sixth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, N. E. corner Clay and Front streets, San Francisco, Cal. j29

## Gold Quarry Company. Location of Works: Placer County, California.

Notice is hereby given, that a meeting of the Stockholders of the Gold Quarry Company will be held in San Francisco, at the office of the Company, No. 705 Montgomery street, Room No. 4, second floor, on MONDAY, the twenty-ninth day of July, at 12 o'clock, noon, of that day, for the purpose of taking into consideration the increase of the Capital Stock of said Company, from the sum of six hundred thousand dollars, divided into six hundred shares of \$1,000 each, to the sum of two millions four hundred thousand shares (\$2,400,000), divided into twenty-four hundred (2,400) shares of one thousand dollars (\$1,000) each.

O. D. ROBERTS,

A. C. PEACHY,

L. MAYNARD,

I. FREEBORN,

E. WERTHEMAN,

Trustees of the

Go d Quarry Company.

T. W. COLBURN, Secretary.

San Francisco, June 24th, 1887. j29

## Gold Quarry Company. Location of Works: Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of June, 1887, an assessment of twenty dollars (\$20) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 705 Montgomery street, (Room No. 4, 2d floor) San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twelfth day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.

Office, 705 Montgomery street, (Room No. 4, 2d floor) San Francisco, Cal. j29

## Hope Gravel Mining Company.—Location of Works and Property: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-sixth day of June, 1887, an assessment of one dollar (\$1) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at No. 529 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the nineteenth day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, No. 529 Clay street, San Francisco, Cal. j29

## Mount Davidson Gold and Silver Mining Company, Storey County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-second day of May, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bush, Martin.....	3468	454	\$454 00
Burke, Thomas.....	3469	4	4 00
Gibbons, P.....	2140	10	10 00
Luning, N.....	2231	11254	11254 00
Peterson, Geo C.....	3305	50	50 00
Peterson, Geo C.....	3307	30	30 00
Peterson, Geo C.....	3310, 3348	10 ea	20 00
Paul, James.....	3327	200	200 00
Paul, James.....	3327	175	175 00
Paul, James.....	3328	100	100 00
Paul, James.....	3364, 3365	25 ea	50 00
Rychman, G. W.....	3356	30	30 00
Schuch, E. P. Mrs.....	3350	4	4 00
Van Reed, J. H. Mrs.....	1856	10	10 00
Vandervoort, J. C.....	1849	4	4 00
Whitney, Geo O.....	3287, 3288	5 ea	10 00
Watson, E. M. Mrs.....	708	2	2 00
Walton, E. M. Mrs.....	708, 9381	ea	2 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-second day of May, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Messrs. Duncan & Co., No. 405 Montgomery street, San Francisco, on the fifteenth day of July, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

G. PARDOY, Secretary.

Office, 121 Sutter street, San Francisco, Cal. j29

## Whitlatch Gold and Silver Mining Company, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of June, 1887, an assessment of fifteen dollars (\$15) per share was levied upon the capital stock of said Company, payable on or before the second day of August, 1887, in United States currency, to the Secretary, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the second day of August, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of September, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

N. C. FASSETT, Secretary.

Office, N. E. corner Front and Clay streets, San Francisco, Cal. j29

At a meeting of the Board of Trustees, held June 21st, 1887, the order levying assessment (No. 7) made February 14th, 1887, was rescinded.

N. C. FASSETT, Secretary.

## To Capitalists.

GOLD QUARTZ MINE, SITUATED IN CALAVERAS County, with County will be sold by me with all its contents, etc., FOR SALE. The mine has three main veins, and more than \$80,000 have been spent in opening them and completing the mill. Good wagon roads all the way. Apply to BELMONT, Bankers, 655 Clay street, San Francisco.

2313-6m

## Mining Notices—Continued.

## Cordillera Gold and Silver Mining Company, Chihuahua, Morelos Mining District, Mexico.

Notice.—There is delinquent, upon the following described stock, on account of assessment levied on the twenty-seventh day of April, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Stewart, David.....	133	47	\$47 00
Whitlatch, J. J.....	247	10	10 00
Hart, G. J.....	76	50	50 00
Hall, O. A.....	251	32	32 00
Barbour, J. H. K.....	10	25	25 00
Root, Amos.....	14	52	52 00
Perry & Gray.....	83	25	25 00
McFarland, W. A.....	71	15	15 00
Trot, J. D.....	61	10	10 00
Knight, J. L.....	15	2	2 00
J. Welch.....	10	13	13 00
Andrews, G. B.....	102	5	5 00
Whitney, S. A.....	110	12	12 00
Cooper, W. B.....	103	18	18 00
Dickson, J.....	167	5	5 00
Markell, R. C.....	146	5	5 00
Simmons, H.....	149	9	9 00
McLeod, W. C.....	181	13	13 00
Baugh, D.....	57	10	10 00
Mahe, G.....	60	10	10 00
Cassell, A. A.....	129	10	10 00
Walch, S. T.....	80	10	10 00
Reed, H. R.....	56	15	15 00
Andrews, G. B.....	144	5	5 00
Whitlatch, S. A.....	101	10	10 00
Whitlatch, S. A.....	203	19	19 00
Dickson, John.....	147	21	21 00
Markell, R. C.....	238	7	7 00
Williams, J. S.....	189	6	6 00
Hendley, D. W.....	189	6	6 00
Rigler, H. D.....	239	5	5 00
Higgin, M. S.....	248	5	5 00
Kelly, J. M.....	123	2	2 00
Chris, J. M.....	54	10	10 00
Belden, F. C.....	115	10	10 00
Belden, F. C.....	119	15	15 00
Lascier, A. C.....	85, 86, 87	495	495 00
Lascier, A. C.....	126 to 131	475	475 00
Williams, J. S.....	159	10	10 00
Hendley, J. W.....	162	5	5 00
Rigler, H. D.....	169	5	5 00
Stewart, J.....	171	1	1 00

Names.	No. Certificate.	No. Shares.	Amount.
Potter, A. P.....	172	1	1 00
Thomas, R. B.....	173	10	10 00
Fitzgerald, W. J.....	173	20	20 00
Derwin, N. S.....	182	10	10 00
Kelly, J. M.....	190	3	3 00
McNamara, C.....	223	8	8 00
Bowman, A.....	202	7	7 00
Small, W. P.....	208	5	5 00
McDonald, T.....	209	5	5 00
Cooper, Emil.....	230	10	10 00
Harris, J.....	223	13	13 00
McOlsen, P.....	225	6	6 00
Curtis, J. M.....	241	10	10 00
Hull, C. A. S.....	240	20	20 00
Chapelle, A. M.....	247	54	54 00
Johnson, J.....	244	5	5 00
Grimson, A.....	246	4	4 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-seventh day of April, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, by Maurice Dore & Co., No. 327 Montgomery street, San Francisco, California, on Monday, the eighth day of July, 1887, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

HENRY R. REED, Secretary.

Office, 321 Washington street, San Francisco, Cal. j22

## Chalk Mountain Blue Gravel Company.—Location of Works: Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eighteenth day of June, 1887, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the third day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 5 Government House, corner Washington and Sansome streets, San Francisco, California. j22

## Cinco Senos Gold and Silver Mining Company, Copello, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of May, 1887, an assessment of ten (10) cents per share was levied upon each and every share of the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, No. 525 Clay street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of May, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-second day of June, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, No. 528 Clay street, San Francisco, Cal. j22

POSTPONEMENT.—The day for dealing stock delinquent on the above assessment, is hereby postponed until the 6th day of July, 1887, and the sale thereof until Saturday, the 27th day of July, 1887. By order of the Board of Trustees.

EDWARD C. LOVELL, Secretary.

j29

## Dardanelles Copper Mining Company, Location: Low Divide District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the third day of June, 1887, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary at Crescent City, California.

Any stock upon which said assessment shall remain unpaid on the tenth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the third day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, at Woodbury & Marhofer's, Crescent City, California. j23

## Gold Hill Tunneling Gold and Silver Mining Company.—Location: Gold Hill Mining District, County of Storey, State of Nevada.

Notice.—The Fourth Annual Meeting of the stockholders of the above named Company, will be held at their office, 415 Montgomery street, San Francisco, Cal., on SATURDAY, the twentieth (20th) day of July, 1887, at 3 1/2 o'clock, P. M., for the purpose of electing Trustees to serve for the ensuing year, and such other business as may properly come before it.

R. WEGENER, Secretary.

San Francisco, June 15, 1887. j21-5w\*

## Hanscom Copper Mining Company. Location: Low Divide District, Del Norte County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the twenty-first day of May, 1887, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Shares.	Amount.
Washington Ayers.....	12	\$ 42
J D G Beach.....	125	3 13
A H Cummings.....	13	42
Sarah A Cummings.....	2	50
Eben Dingley.....	2	50
Geo K. Glavas.....	100	25 00
Simon K. H. Glavas.....	8	20 00
Lewis Kelley.....	2	50
R A Merrill.....	2324	7 17
James Simpson.....	954	2 43
Emma Simpson.....	1684	4 17
I K Miller.....	25	5 25

And in accordance with law, and an order of the Board of Trustees, made on the twenty-first day of May, 1887, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of Badger & Chapman, Kearny street, corner of California street, San Francisco, on Monday, the eighth day of July, 1887, at the hour of 1 o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN HANSKOM, Secretary.

Office, at the Etna Iron Works, Fremont street, between Howard and Folsom, San Francisco. Office hours: from 8 A. M. to 12 M. j22

## I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of June, 1887, an assessment of one dollar and fifty cents (\$1.50) per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, in the store of J. O. Hodge & Co., 418 and 420 Clay street, San Francisco, Cal., or to John G. Clayton, at Silver Mountain.

Any stock upon which said assessment shall remain unpaid on the nineteenth (19th) day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 418 and 420 Clay street, San Francisco, Cal. j22

## Lady Bell Copper Mining Company, Low Divide Mining District, Del Norte County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the eighteenth day of June, 1887, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to J. K. Johnson, at Crescent City.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifth (5th) day of August, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

B. P. WILKINS, Secretary pro tem.

Office, 311 Market street, San Francisco, Cal. j22

## Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

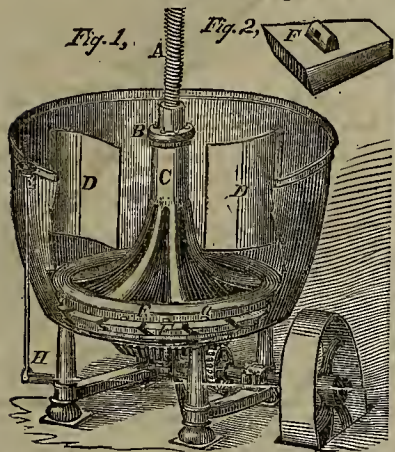
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of June, 1887, an assessment of three (\$3) dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at No. 5 Government House, corner of Sansome and Washington streets, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the fifth day of July, 1887, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of July, 1887, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.



## Machinery.

# STEWART'S CELEBRATED HINGED Grinder and Amalgamator.



## Is the Cheapest and Quickest Pan

Now used. It is flat-bottomed, loses far less power in throwing the pulp, and circulates the same under the miller to better advantage than any other Pan in use, while the steam, owing to the thinness of the cone, has a more direct effect in heating the pulp. E is the miller plate; F the Grinding Shoe, attached by an adjustable hinge joint in the middle of the same—the bottom wearing down even with the dies.

Mr. J. H. STEWART, the inventor, has had ten years of experience in mechanical operations, and may be addressed at San Francisco, or called on at the Miners' Foundry, First street, where his Pan is manufactured, and is to be seen at any time in operation.

## VARNEY'S PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the miller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and so the circumference as before. Thence it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Sellers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the  
**PACIFIC FOUNDRY,**  
171  
San Francisco.

## FOR SALE!



**PATENT RIGHT OF  
HUNT'S WINDMILL** for the State of California or the whole Pacific coast.

This Mill is superior to any other, can be built cheaper, and is more durable.

Full sets of patterns for four sizes Self-Regulating Mills, and three sizes of Adjustable Mills, will be sold with the right.

This Windmill has been extensively advertised all over this coast, and is favorably known. Apply to

**E. O. HUNT,**  
225 SECOND STREET,  
11v24  
San Francisco.

## To Quartz Miners and Others.

### NOTICE!

I WISH TO CALL YOUR ATTENTION TO A PULVERIZER of my own invention, which I have called the **HITCHENS' ORE PULVERIZER.**

It is now in operation at the South Park Saw Mill, on Brannan street, between Third and Fourth streets. I am prepared to reduce, to an impalpable powder, quartz, sulphurets, tailings, cement, manganese, charcoal, sands, marble, plumbago, copper ores, etc.

In view of the importance of reducing ores, etc., to an impalpable powder, and being satisfied my invention to be a perfect success, I invite all interested in the subject to examine it. Patent applied for.

1v14-3m JAMES HITCHENS.

## NELSON & DOBLE,

AGENTS FOR

**Thomas Firth & Sons' Cast Steel, Files,**  
Etc., Shear, Spring, German, Flow, Blister and Toe Calk Steel, manufacturers of

**Mill Picks, Sledges, Hammers, Picks,**  
Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,  
319 and 321 Pine Street,  
Between Montgomery and Sansome, San Francisco.  
10v14q

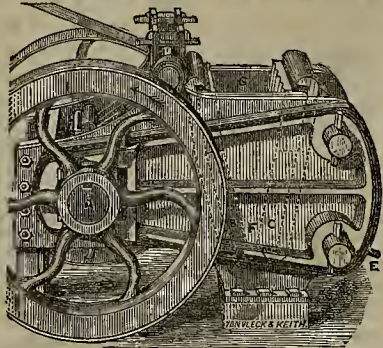
## SAN FRANCISCO BRUSH FACTORY,

No. 211 California st., manufactures to order all kinds of **BRUSHES.**

At lower prices than cost of Eastern Importation. Brushes for all classes of machinery. A superior Scrubbing Brush from Soap Root fiber; also, Silica Brushes from the same material. The Patent Rattan, Street Stable, Fine and Flame Brush, for which they have the exclusive right for the Pacific Coast.

All orders from the Interior promptly executed.  
**FELDMAN, SIMPSON & CO.,**  
16v14q. Proprietors.

## Brodie's Patented Improvements



## FOR THE TREATMENT OF Gold and Silver Ores.

**BRODIE'S PATENT IMPROVED QUARTZ CRUSHER.** The attention of all interested in Mining is respectfully called to this improved machine for breaking or Spalling Quartz, or other Rock, possessing, as it does, simplicity of action and lightness of construction, so far as is compatible with strength and durability. In consequence of these advantages the advertisers are enabled to offer these machines to the public at the following low terms:  
No. 1—Or 6-inch Crusher, capable of reducing from three to four tons of quartz per hour, no piece being larger than a walnut—price.....\$400  
No. 2—Or 10-inch Crusher, capable of similarly putting through five to six tons per hour.....\$500  
No. 3—Or 16-inch Crusher, will in a similar manner crush from seven to eight tons per hour.....1,200

**EXPLANATION OF THE ABOVE ENGRAVING.** The frame is made of cast iron, bound with heavy wrought iron bands, making it very strong, and at the same time light and portable. The crusher is bolted to a wood frame of sufficient height to clear the fly-wheel, and allow the crushed quartz to pass off. The dotted lines show the movable jaw, B, which is bolted to the frame, and is regulated at pleasure, so as to graduate the size to which it is intended the quartz shall be crushed. G represents the feed opening, by which the size of the machine is designated.

The arrow on the fly-wheel shows the direction to drive the eccentric, which, in combination with the link, D, gives the movable jaw, B, a forward and downward motion at the same time, and which makes the hardest rock yield and separate into fragments of any desired size.

The above Crushers have been recently erected and are now successfully employed at Bear Valley, Mariposa county, Raywilde Ranch, Tuolumne county, Excelsior Mine, Lake District, Nevada county, and can be seen in operation at the Fulton Foundry, First street, San Francisco.

The following testimonial respecting the effectiveness of this Crusher, has been received from the Superintendent of the "Raywilde Ranch" Mine, in Tuolumne county:

"Raywilde Ranch, Tuolumne Co., Sept. 23, 1886.  
JAMES BRODIE, Esq., San Francisco: Dear Sir: I give me pleasure to inform you that I have for the past three months had one of your largest sized Rock Crushers in use, at the Raywilde Ranch Mining Company's Mill, which is entirely met my expectations, and I have no hesitation in recommending it to all who are in need of a machine for rapidly, cheaply and properly preparing quartz for the stamps. Yours truly,  
Supt. Raywilde Ranch Quartz Mill."

**BRODIE'S PATENT IMPROVED GERMAN AMALGAMATING BARREL.**—This Barrel obtained a premium at the Fair of the Mechanics' Institute in San Francisco, in 1884. Further particulars will be afforded on application to the subscribers.

Those infringing the patent rights to the above improved Barrel, are hereby informed that on and after the 1st November, 1886, the royalty charged for using the same will be raised to the sum of \$100 per Barrel.

A drawing, with explanation of this machine, will be found in the "Mining and Scientific Press," of September 29th, 1886.

**BRODIE'S PATENT WIND-BLAST SEPARATOR FOR DRY CRUSHING.**—This Dry Crusher has been found the most economical and effective mode of crushing ores in Mexico, California and Nevada. Diagrams and explanations afforded on application to the subscribers.

A drawing and full description of this machine will be found in the Mining and Scientific Press of Sept. 22nd, 1886.

**BRODIE & RADCLIFFE,**  
Express Building, 402 Montgomery street,  
12v13H San Francisco.

## Hooker's Patent Pump Valve.



A, A, A, are the guides which work in the corners of the Valve Chamber, and secure the valve from turning. B is the body of the Valve. F shows the edge of the india rubber facing, which is secured to the bottom of the Valve by a washer and screw, the end of which is seen at C.

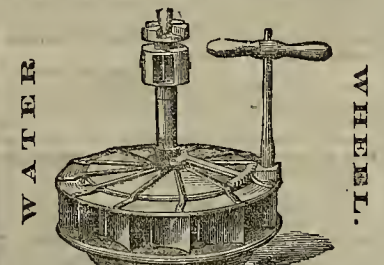
The advantages claimed for this Valve, are: 1. Cheapness of construction. 2. Greater durability. 3. As it rises square from the seat on all sides, the area for the passage of water is largely increased at a small elevation of the valve, thus insuring the discharge of more water than with the common pump valve. 4. With this Valve a pump may be run at a high rate of speed, and insure a larger supply of water.

Rights for the use or manufacture of this Valve, for sale by

**V. CUSHING,**  
120 Front street, San Francisco  
These Valves are used in the EXCELSIOR PUMP, which is giving such general satisfaction to the public.

See illustration and description of this Pump, published every other week in this paper. 18v14qH

## LEFFEL'S American Double Turbine



**THESE WHEELS, UNEQUALED AND UNRIVALED** in the United States or the world, have been fully tested on this coast, more than forty being in use at this date in California and Oregon, driving all kinds of machinery, Saw Mills, Flour Mills, Quartz Mills, etc., etc.

**CALIFORNIA REFERENCES.**—E. Stoecken, Polson; O. Simons, Oakland (Mill at Clear Lake); Morgan Coville, Lexington; Santa Clara County, J. Y. McMillan, Lexington; Santa Clara County. Send for Circular.

**KNAPP & GRANT,**  
Agents for California.  
26v13-1yq 310 Washington street, San Francisco

## Hunt's Globe Pump



Is extensively employed for raising water by hand or wind-mill power, for house or garden uses. Manufacture five sizes, from 3 to 8 inches diameter in the chamber. These Pumps are all fitted for iron or lead pipes. They are very durable and easy to repair.

No. 3—3-inch Chamber, 6-inch Stroke.

No. 4—4-inch Chamber, 6-inch Stroke.

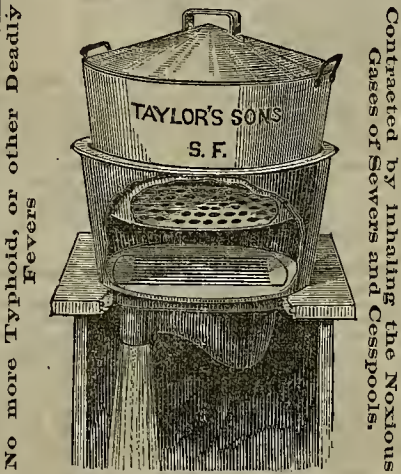
No. 5—5-inch Chamber, 6-inch Stroke.

No. 6—6-inch Chamber, 8-inch Stroke.

No. 7—7-inch Chamber, 10-inch Stroke.

Manufactured at No. 28 Second street, and 110 Jessie street, San Francisco, by E. O. HUNT, Windmill Builder.  
22v14H

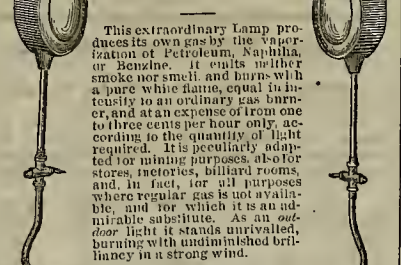
## HEALTH! HEALTH!



To prevent this, purchase one of  
**Taylor's Stench Traps and Garbage Baskets,**

And promote the health, comfort and cleanliness of your family. For description see Mining and Scientific Press, April 6, 1887. Sole agents and retail by TAYLOR & SONS, at No. 429 Pacific street, San Francisco. 16v14H

## THE CELEBRATED Self Generating Portable Gas Lamp.



This extraordinary Lamp produces its own gas by the vaporization of Petroleum, Naphtha, or Benzine. It emits neither smoke nor smell, and burns with a pure white flame, equal in intensity to an ordinary gas burner, and at an expense of from one to three cents per hour only, according to the quantity of light required. It is peculiarly adapted for mining purposes, also for stores, interiors, billiard rooms, and, in fact, for all purposes where regular gas is not available, and for which it is an admirable substitute. As an outdoor light it stands unrivaled, burning with undiminished brilliancy in a strong wind.

**Directions for Use.**  
Charge the reservoir with the prepared fluid, or with Benzine, from half to three-fourths full; allow a portion to run through into the cup, then turn off the tap and ignite the fluid, which will heat the burner sufficiently to generate the gas, which will be seen issuing from the top. The tap must now be turned on, and a steady light will be maintained till the whole of the contents of the reservoir is consumed.

A small needle, bent at the point and fixed in a holder, may be occasionally required to clear the minute hole through which the gas issues, and the regulating screw at the bottom turned a little back; but care must be taken not to force the screw too high, and it should never be used to extinguish the light—by turning the tap off, it will gradually go out.

When necessary to renew the cotton which is placed in the lower pipe to prevent the too rapid flow of the fluid, the lamp should be placed in a vise and the burner screwed off. The burnt cotton must then be withdrawn, and a fresh piece of stout cotton rag, one inch wide and four or five inches long, should be doubled over a piece of wire, and inserted into the pipe—the ends cut short off, the burner again screwed on with a little white lead, and the lamp is ready for use.

Manufactured solely by JOHN J. HUCKS, original proprietor. Factory, North Beach, San Francisco; and for sale by his agents in every city and town throughout the State.  
18v14-3m

THE WYSAW, Missouri, *Times* publishes the following recipes, that may be worth remembering: "The oil of pennyroyal will keep mosquitoes out of a room, if scattered about even in small quantities. The inner bark of white ash will, if brought in contact with a snake, stiffen him like a stick in an instant; and a bite of fresh tobacco, placed on his tongue, will kill him dead as if struck by lightning, while sheep and goats feed on it, pressed, with impunity. Roaches are exterminated by scattering a handful of fresh cucumber parings about the house. No fly will light on the window which has been washed with water in which a little garlic has been boiled."

**THE SNOW PLANT.**—That wonderful production of our Alpine heights, the snow plant, says the *Alpine Miner*, may now be found, we are told, in large quantities. We have never been fortunate enough to see one in its growing state, and therefore will not attempt a description; but from hearsay we are led to believe this plant is one of the rarest of nature's productions.

A CHIME of forty-two bells, to be placed in the Exposition, is played like a pianoforte with perfect ease, to any tune. Four years were spent in the construction of the instrument.

**BLACK RIVER, Wisconsin,** is completely jammed with logs for fifteen miles. It is estimated that there were not less than 225,000,000 feet in the river at the opening of spring.

## EDWARD W. TIFFT,

DEALER IN ALL KINDS OF

## WOOD AND COAL.

No. 513 Bush street, between Dupont and Stockton  
14v14-6m SAN FRANCISCO.

## CUT NAILS.

2,000 KEGS ASSORTED SIZES,

For sale in any quantity, to close invoice, at the very  
**Lowest Rates, by**

## THOS. H. SELBY & CO.,

116 and 118 California Street,  
SAN FRANCISCO. 19v14-3m

## Pratt's Abolition Oil.

**FOR ABOLISHING PAIN—THE BEST REMEDY** in existence for Rheumatism, Neuralgia, Paralysis, Headache, Toothache, Sore Throat, Diphtheria, Weak, Swollen and Stiff Joints, Contracted Muscles, Wound, Croup, Whooping Cough, Cholera, Pains in the Breast, Lame Back, and all aches and pains. It is the poor man's friend, and the best family physician. Full directions accompany each bottle. Price 50 cents and \$1 per bottle. For sale by all dealers in medicines. Sole Proprietors, A. McBOYLE & CO., Druggists and Chemists, 534 Sacramento street, opposite White Chief House, San Francisco. 10v14-1y

## GOVERNMENT HOUSE,

Corner of Sansome and Washington sts.  
SAN FRANCISCO, CAL.

THE STREET CARS PASS THIS HOUSE IN every direction, every ten minutes. The rooms of the House are well furnished, large and airy, are let by the month, week or day, and are kept in superb order. There is a Restaurant attached for families and families, where persons can board for one-half they are required to pay at hotels.  
17v13-6m SANBORN & CO

## To the Mining Community.

THE UNDERSIGNED, WHO HAS HAD THIRTY YEARS constant practice in superintending mines, is now prepared to inspect and report on Mines and Mining Properties, and advise as to the management of the same. Office, 551 Harrison street, San Francisco.

16v14q **WILLIAM WILLIAMS,**  
Practical Mining Engineer.

## Notice to Miners, Well-Borers and Water Companies.

**M. PRAG** IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pumps in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved pattern, for vessels of all classes. Also, Ship Plumbing done.  
18v13-1y Stove Store, No. 125 Clay street, below Davis.

## \$85 for Hunter's

## Improved Concentrator.

The patentee is prepared to sell his Concentrators for the above price, and guarantees, when the machines are run according to directions, to give 20 per cent better results than from any Concentrator built on the Coast, and will refund the money if they will not perform what is claimed for them. Machines with copper plates, will cost \$100 extra. The Machine can be

**Seen in Operation**  
At Booth & Co's Iron Foundry, up stairs. Parties purchasing Concentrators will do well to examine before buying others of pretended merit. Persons desiring it can have a practical concentration made of tailings at any time, and prove the working of the machine.

## FOR \$50.

**HUNTER'S EUREKA AMALGAMATOR.** For sale, the right to build and use in mills. A working plan will be furnished each purchaser. Five machines can be seen in operation at the Eureka Mill, Grass Valley. The cost of the iron for the machine, without the iron-box, is about \$100. The box will answer for wood.

By reference to the Mining and Scientific Press of May 25th, a full description of the above Machines may be found. For particulars, send for Circulars, or address  
**ANDREW HUNTER,**  
Union Foundry, San Francisco.

25v14H







































